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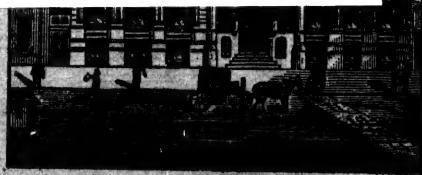
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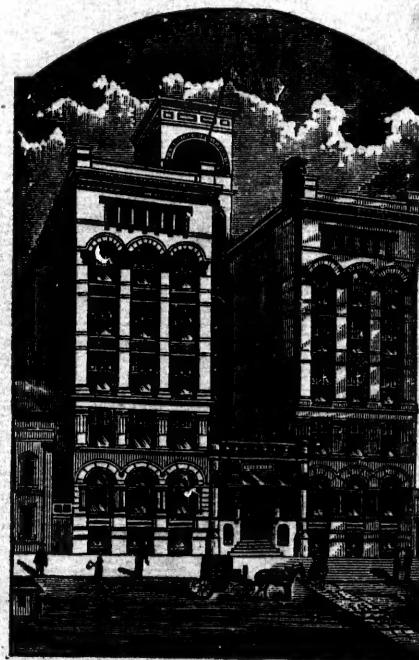


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THE UNIVERSITY OF WESTERN ONTARIO

LONDON CANADA

SPECIAL CIRCULAR
ON THE
FOLD FIELDS OF ONTARIO
AND THE MINING OF THE PROVINCE



ISSUED BY THE
MINES CONTRACT AND INVESTIGATION CO.
OF TORONTO, Limited.

June, 1899.



THE MINES



INCORPORATED MAY 12TH, 1890.

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In 20,000 Shares of \$5.00 each.

Full Assessability.

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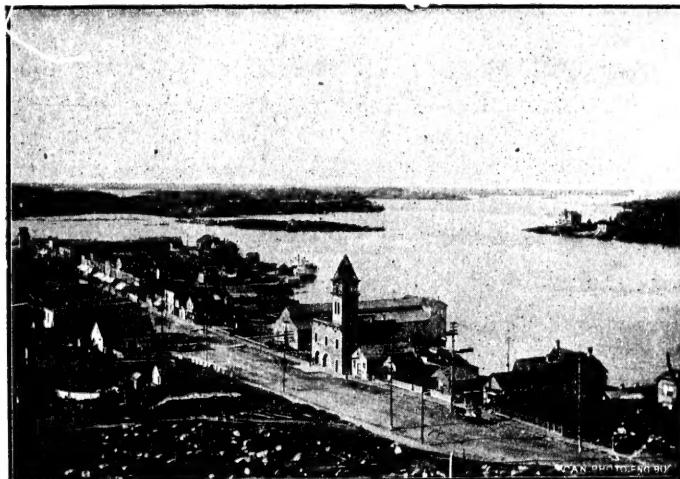
SPECIAL CIRCULAR
OF THE
Mines Contract and Investigation Co.,
OF TORONTO, LIMITED,
ON
MINES AND MINING IN ONTARIO,
WITH SPECIAL REFERENCE TO THE GOLD FIELDS OF THE
RAINY RIVER DISTRICT.

THE gold fields of North-Western Ontario, especially those included in the large area comprising the Lake of the Woods, the Rainy River basin, and the more northern section bounded on the north by English River and Lac Seul, are steadily making a reputation which, notwithstanding present lack of capital, will probably, within a few years, place the district in the very fore of the gold producing regions of the world.

Amongst the advantages which tend to produce such pre-eminence must be placed the extraordinary abundance of water power, nowhere rivalled in gold producing countries, the plentifulness of timber, the easy and cheap accessibility of the entire region by water communication and rail, the latter to be soon greatly increased, the cheapness and comfort of living, and more than all, the immense area of the gold-bearing rocks and the fact that nowhere else does quartz mining return a quicker profit for the expenditure incurred in opening and developing mines. Unlike the Australian and Transvaal fields, the entire country is traversed by exposed veins and reefs of gold-bearing quartz, the veins numbering tens of thousands and yielding profit generally almost from the very surface.

Canadians have little capital to spare beyond what is needed in the ordinary operations of business; hence the lack of activity witnessed in connection with some most promising properties. During the

past year or a little more, American capital has become interested in these fields, and where it has opened properties, work has been pushed with a vigor rarely equalled by Canadian or English syndicates or companies. Several of the properties opened are gigantic reefs of low grade ore, workable at very low cost, and in particular instances, such as the Hammond reef, equal apparently in bulk of gold-producing ore to the entire known veins of Australia or of South Africa. In such cases quarrying is the only method required, though pits have been sunk to moderate depths to test the quality of these quarries. Mostly the gold is found in smaller but richer veins. In several instances, on small properties of forty or eighty acres in extent, the



RAT PORTAGE, LAKE OF THE WOODS.

veins are counted on the surface by the score. Five or six feet is a very common width of veins, but in not a few properties, cross cutting reveals a vein width of twenty feet or more of high grade ore. Failures have occurred in a few instances, but generally from lack of capital and from the inexperience of Canadians in mining matters; and not from either the poverty or lack of continuity of superficially well-selected veins.

In 1894 gold mining in the Rainy River and Lake of the Woods basin was almost unknown. The Sultana, which is now one of Canada's leading payers, had reached a depth of only 105 feet and was consequently merely a prospect. To-day there are three dividend payers in

the Western Shoal Lake and Lake of the Woods district, and two in the region of the eastern Shoal Lake or Lower Seine, which drains into Rainy lake and river.

So far as developments are concerned they have practically been confined to an area lying south of a line measuring 212 miles between English River and Ingolf Station on the C.P.R., though to the north several prospects have been developed with encouraging results. But even in the region south of the C.P.R., and between it and the international boundary line, very large areas have not been crossed by prospectors. Almost everywhere where prospecting has been fairly attempted and the country is not hidden by swamp or alluvial deposits (the latter are not extensive), gold bearing veins show themselves in an abundance almost unknown elsewhere, either in the old world or in the Rocky Mountain and Andean regions of America. At present about 500 properties are under more or less active development, but generally by people who have very little money to push their work.

For convenience of grouping, the Rainy River gold fields may be divided into five camps:—

No. 1. The neighborhood of the Western Shoal Lake, a sort of western arm of the Lake of the Woods.

No. 2. The remainder of the Lake of the Woods region.

No. 3. The Eastern Shoal Lake, or Lower Seine River district.

No. 4. The Upper Seine fields.

No. 5. The Manitou region, including the country around Tache Station on the C.P.R., the Manitou lakes, and Lakes Wabigoon and Minnietakie.

In Camp No. 1, Western Shoal Lake, there is one dividend payer and nine other producing mines.

In Camp No. 2, north and northeast of the Lake of the Woods, there are two dividend payers and four other producing mines.

In Camp No. 3, Eastern Shoal Lake or Lower Seine, there are two dividend payers and four other producing mines.

In Camp No. 4, the Upper Seine, there are eight producing mines.

In Camp No. 5, the Manitou country, there are four producing mines.

These dividend paying and other producing mines are all more or less free-milling, never smelting propositions; and nearly all possess easy accessibility by water or short roads to the Canadian Pacific Railway, and many will shortly be within easy reach of the Ontario

and Rainy River Railway, now under construction and likely to be completed within a year, from Port Arthur on Lake Superior, down the Seine Valley as far as Rainy Lake, and soon afterwards to the Lake of the Woods, and on to Winnipeg.

By the expression "producing mines" it is intended to designate properties which have not yet reached the status of "dividend payers" but which, within two years at furthest, appear not unlikely to attain that position. They must not be confounded with promising prospects such as was the Sultana mine in 1894. In the list given below are included all the dividend paying and other producing mines, and, besides, a number of promising properties which appear more or less worthy of the attention of investors. But the list does not include all the developments where a depth of over fifty feet has been attained, as many of such prospects, as well as several of the mines, do not care to make public their operations.

The information given is derived from various sources, such as directors' reports, and enquiries by confidential agents of the Mines Contract and Investigation Company, Limited, and is tested and supplemented generally by other information gained from the Ontario Government Bureau of Mines reports and in other ways. Most of the information applies to the position of the mines during the past month.

Leading Gold Mining Properties.

Included in the following list are all the producing mines of the Rainy River District of North-Western Ontario. There are included also many prospects which, though not yet, perhaps, entitled to be called mines, are nearly all sufficiently developed to indicate their likelihood of soon becoming promising properties deserving of the title of producing mines, and other properties on which development is proceeding, but regarding which it is yet premature to say what the probabilities are.

Camp No. 1.

Western Shoal Lake,

Western Side of the Lake of the Woods.

MIKADO.

D. 200, 202, 149. Dividend payer. Mikado Gold Mining Co., (Imperial charter). Main shaft down over 300 feet, on 4 to 6 foot vein. 4 veins worked. Driftings at 4 levels. About 120 men. 20 stamp mill. Large plant. Valuable concentrates on hand now going through, large cyanidation plant recently installed and has begun work. Bullion produced in January \$41,600. Average since production began has been said to be about \$30,000 per month, and the present weekly bullion about \$10,000 per week.

SIRDAR.

D. 410. Adjoins the Mikado. Toronto and Western Mines Development Co. 4 shafts, deepest nearly 200 feet, on 3 to 7 foot vein, width increasing with depth. Work active on several veins. 40 men. Hoisting plant and ordinary ore-producing equipment. 50 stamps to be erected this summer. Ore values claimed to be as good as Mikado's.

CAMERON ISLAND.

S. 171. Cameron Islands Mining and Development Co. Deepest 130 feet, on 15 foot vein. Some drifting at 110 feet level. 10 men. Steam, usual buildings. Ore claimed to be about \$14.

SENTINEL.

W.A. 7. 40 acres, on Shoal Lake, in Mikado group. Sentinel Consolidated Gold Mining Co. Deepest over 150 feet, on a vein over 10 feet wide. Very active drifting and sinking is being done. 10 men. Usual buildings, hoisting and pumping machinery. Work began May, 1898. Mill run ore values about \$14 per ton.

NORA.

D. 433. At Labyrinth, on Shoal Lake. An American syndicate. 130 feet on 4 foot vein. Drifting. 10 men. Ore assays said to average over \$14.

BULLION.

D. 233. Adjoining the Mikado. Bullion Mining Company of Ontario. Considerable development work. Is putting in compressor plant and other machinery.

GOLDEN HORN.

D. 288. Private ownership. 100 feet deep. 10 men. Buildings. Assays said to average over \$23.

GREAT GRANITE DIVIDE.

E. 272. At Echo Bay. Great Granite Divide Gold Mining Company owns about 5,000 acres close to Mikado. Considerable development on several properties. 272 E. reported to continue to show rich ore with depth.

YUM-YUM.

S. 94. Yum-Yum Mining Co. About 86 feet on one vein. Many veins. Buildings.

STANDARD.

Standard Mining and Development Co. Some development. No recent reports.

CORNUCOPIA.

D. 212, D.W. 216, 217, 229. Cedar Island Gold Mining Co., London, Eng. Was a promising property in early development work, but through litigation between owners little development has been done of late.

BURLEY.

Water lot near Sultana. Private ownership. Over 100 feet. On a continuation of the Crown reef of Sultana. Crib work, steam hoist and able, air compressor drills, centrifugal pumps, etc. 10 men. Ore value not given. Title in dispute some time ago.

Camp No. 2.

The Remainder of the Lake of the Woods District.

SULTANA.

W. 5. Dividend payer. John F. Caldwell, owner. Depth, over 475 feet. Over 2,500 feet drifting and other underground work. 120 men. 30 stamps ; 30 additional contemplated. Ore value probably \$8. Cost of mining and milling at present is \$1.82, or 60 cents less than at the celebrated Homestake. Gold brick turned out weekly. Owner said to have refused \$1,500,000 for the property, and more recently \$2,250,000.

REGINA.

Whitefish Bay. (Dividend payer). Regina Gold Mining Co., London, Eng. Approaching 500 feet in depth, on vein 1 to 9 feet ; 6 levels. Over 2,000 feet of drifting. About 50 men. 8 Tremaine stamps, equal in capacity to 40 gravity stamps, recently put in. Very large equipment. A cyanidation plant, to treat concentrates, in use. Deeper sinking is being continued, though enough ground is opened to keep milling plant occupied. Ore value estimated at \$12.00. Cost of working is about \$3.00.

STELLA.

S. 86, 87. East of Andrew Bay. East side Lake of the Woods. Ontario Prospectors' Mining and Development Co. 100 feet deep; shafts pits, and also adits into hill. 10 men. Buildings. Assays reported about \$21, with satisfactory results with increasing depth.

GOLDEN GATE.

The Golden Gate Mining and Development Co., which owns the Queen, McA. 46, the Sovereign, D. 236, an adjoining property ; the Regal, McA. 22, in the Western Shoal Lake country, near the Mikado ; Yum-Yum, and other well-known mines ; and the Duchess, south of the Golden Gate on the other side of the Lake of the Woods, has made arrangements by which work on these very promising—even specially good properties so far as superficial examination can determine—will shortly begin with energy. On the first two properties are veins 5 and 7 ft. wide, meeting, which by trustworthy analyses average \$11, at the small depth reached by present developments. On the Duchess property, a very large one, 202 acres, there are 17 known veins.

BAD.

P. 349. Haycock township. Non-company ownership. 100 feet deep; tunnelling into hill to main vein. 10 men. Buildings. Average mill results stated as over \$22.

VIRGINIA.

On Sturgeon Lake, east of Whitefish Bay. Owned chiefly in Wheeling, W. Va. Over 100 feet deep and drifting at 100, being done. About 10 men. Buildings. Average assays said to be over \$30.

TRIGGS.

On Gi Bi Lake. Triggs Gold Mining Co. Ore body schist, 200 feet wide, with three veins of quartz, assaying \$10 upwards, running through it. Shaft about 100 feet deep. Working day and night.

GELLEY LAKE.

The Stella is the leading property in a group extending east and northeast, which from indications furnished by what developments have been made, may prove to be amongst the richest groups in the Lake of the Woods country. The sub-district embraces Gi Bi Lake, with Golley Lake as a centre. Golley Lake locations S. 100, 101, 102, 103, easily reached by canoe from Scovil station, or by steamer and portage from Rat Portage, lie about 6 miles northeast of the Stella shaft. On S. 101 is a vein, assaying on an average over \$16, and running 2 miles unbrokenly across the locations, and with the formation of the country.

BATH ISLAND.

504, 589 P. Bath Island Mining Co. Work confined so far to 504 P. 100 feet deep. Buildings. 19 veins claimed. Work suspended of late. Mr. Pringle, late superintendent of Regina, reports favorably of the property.

BOULDER.

Whitefish Bay. Ontario Boulder Mining Co., (American capitalists). 170 feet deep on 29 foot vein, with crosscutting and considerable drifting. Very many veins. Air compressor drills and powerful hoisting engine. 15 to 30 men.

SCRAMBLE.

Shaft reported 84 feet deep, with over 200 feet of drifting. Ore body very large, and said to be several hundred feet wide in places.

TREASURE.

247 P. Near Margach Station, C.P.R. Ship to Keewatin Reduction Works. Recent mill run said to yield \$16 off plates.

BLACK STURGEON.

Lot 12, 6th concession, and part of 11 and 12, 5th concession, Haycock. Private ownership. 130 feet in December. Walls not reached. 300 feet of drifting reported. 20 men. Buildings. Ore values said to average about \$25.

Camp No. 3.

Eastern Shoal Lake, Lower Seine.

OLIVE.

G. 60, 61, 69. H.P. 439. Little Turtle Lake. Dividend payer. Olive Gold Mining Co. Main shaft is over 250 feet deep. 4 shafts. Several hundred feet of drifting. 40 men. 10 stamps. Free milling ore and concentrates. Ore value \$23. First dividend paid last October. Mine has paid nearly whole cost of development out of crushing done by a two-stamp mill.

GOLDEN STAR.

A.L. 114, 116. Monthly dividends. Golden Star Mining and Exploration Co. 400 feet deep on vein averaging $7\frac{1}{2}$ feet. 5 levels and over 1,400 feet of drifting. 4,000 tons on pile, 50,000 blocked out. 50 men. 10 stamps, each crushing $3\frac{1}{2}$ tons per diem. 20 additional stamps going in. Well equipped. Otto aerial railway to mill, which is lighted by electricity. May mill run \$22,835; profit \$18,919. First dividend, 1 per cent., declared in February. Average mill-runs over \$20 per ton.

J. O. 41. Shore of Bad Vermillion Lake. Adjoins Golden Star to the northwest, and on it is located the Golden Star stamp mill.

A. D. 2, or GOLDEN CRESCENT.

A.D. 2, 3, 4. Operated by the Golden Crescent Co. Work began May '97. Deepest shaft is down about 90 feet. 2 drifts, 100 feet each, along veins. About 500 feet development in all. 20 men now employed. Work to be carried on shortly with sufficient capital. 10-stamp mill expected to be erected this summer. Average returns from crushers about \$10.

LUCKY COON.

P. 655. Closed down 3 years ago, after putting up 5-stamp mill and sinking two shafts, one 65 feet deep, and the other 50 feet deep. Again working, deepest shaft 95 feet. Additional machinery has been ordered, including a 7 air-drill compressor plant. Part of the machinery arrived a few days ago.

ALICE A.

K. 191. 80 acres on Little Turtle river. American-Canadian Gold Mining Co. 100 feet deep, with cross cut, etc., 10 stamps; 100 more arranged for. Immense ore body, 700 to 800 feet wide. Average assays across run about \$5.60, and on a 60 feet wide streak about \$10. Cost of mining and milling about \$3 per ton. Concentrates according to complete analysis by Johnson, Matthey & Co., assayers and meltters to Bank of England, show values in silver, zinc, lead and copper, which indicate that concentrates alone will pay cost of mining and milling. Concentrating plant ordered.

DECCA.

K. 222. Decca Gold Mining Co., composed principally of Montreal people. Deepest shaft is over 130 feet on seven foot vein, said to be with good results. 15 men. Stocks recently put on market to enable owners to proceed with development work.

FOLEY.

A.L. 74, 75, 76. Recently secured by an English syndicate who are about to resume work. Depth 435 feet on 3½ foot vein. 4 levels on main shaft; longest drift 278 feet. 32 veins and 11 shafts or pits. 20 stamps. Thorough equipment. Bullion produced \$45,000. Average value of ore given at \$14.

EMPEROR.

P. 656. Toronto owners. One shaft down 200 feet. About 10 men employed. Several buildings erected. Assays good.

FERGUSON.

A.L. 110, 111., K. 223. An English Co. Has been dormant, but is now changing hands.

Several Other Properties.

As a result of the success of the Golden Star several companies have been incorporated recently to develop, in the vicinity of that mine, several prospects of more or less promise, on a few of which some development work has been done. Amongst the properties are J.O. 41,

A.D. 2 (Golden Crescent) Swede Boy—E. 257 (Headlight), the Gold Bug, (P. 660), the Lucky Coon (P. 655), the Randolph (A.L. 115), and the Golden Eagle, (H.P. 192). The Lucky Coon and A.D. 2, are referred to above. The Randolph adjoins the Golden Star and was favorably reported upon by Julian Ropes, M.E., who at the same time reported on the Golden Star less favorably. The Swede Boy till last February was in the hands of its original owners and developers. On the Randolph work is being actively pushed. The Mutual Gold Dev. Co. are to open several very promising properties near the southern end of Bad Vermillion Lake.

Camp No. 4.

The Upper Seine.

HAMMOND.

337 and 338 X. Hammond Gold Reef Mining Co. Is an immense quarry—a reef rising several score feet in height—of Laurentian gneiss, impregnated with quartz and gold—about 500 feet wide, low grade ore, yielding a profit of \$3 per ton. Can be quarried and milled for less than \$1.00. 140 feet, deepest shaft. Cross-cutting where ore bed is 462 feet wide is being vigorously pushed. 40 to 70 men employed. 10 stamp mill. 30 stamps more have been put in. Well equipped. Electric power is to be brought from Clearwater Lake near by. Average \$3.75, of which \$3.00 per ton is clear profit, owing to the ore being easily mined. About to be amalgamated with the Folger-Hammond property.

FOLGER-HAMMOND.

316 to 322 X. and H.P. 582. Saw Bill Lake. Folger Hammond Mines Co., a close corporation. A quarrying proposition in the immense Hammond Reef. Owns the water power on 357 X, and has contracted for water wheels and necessary electric plant to work the various properties on the reef. Considerable opening done, and immediate equipment intended. Average values \$4 to \$6.

KABASKONG.

322 X. On Hammond Reef. Kabaskong Gold Mining Co. Drifted 100 feet into a hill. Average assays, \$3.25. Nothing done for 12 months.

BONHEUR BELLE.

320 X. A company subsidiary to the Folger-Hammond Co. Property is on the Hammond Reef and adjoins the Saw Bill. Extensive development work, and shipping. 6 men.

WAMPUM.

334 X. Folger-Hammond syndicate. 55, 40 and 30 feet on 3 foot vein. Assays \$4 to \$13.

HIAWATHA.

336 X. Hiawatha Gold Mining and Milling Co. 75 feet on 4½ foot vein. Average assays, \$15.

SAWBILL.

X. 313, 314 on Hammond Reef. Sawbill Gold Mining Company, owners. 250 feet deep. Much drifting and other work. 10 stamps. 20 men. Well equipped. Ore, low grade. New syndicate expect to sink to 400 feet during the present summer. Mine has been put under new management, with Capt. J. P. Williams, an experienced miner, in charge.

HIPPOPOTAMUS, or Old Railroaders.'

A.L. 282, near Island Falls. Owned by a syndicate. 190 feet deep in vein 6 to 8 feet wide, and well defined ; nearly 150 feet of drifting. Steam drills, compressors, hoists, etc., and necessary buildings. Ore soft; average value from careful assays over \$22 per ton. Water power securable at Island Falls, near by.

NEW RAILROADERS.'

A.L. 283. A Fort William, Ont., syndicate. 74 feet in vein 8 to 14 feet wide. Average value \$8.40 per ton. No work done during past year.

PETTIGREW, or King Mine.

A.L. 198, near Hippopotamus. Private ownership. 60 feet deep. About 10 men. 2 Tremaine stamp test mill being put in, and also hoisters and drill plant.

ROY.

A.L. 298, 299, near Island Falls. About 150 feet in a 4 foot quartz vein, within a 60 foot belt of gold bearing schists. Crosscut and drifting at 100 feet level. Average assays in quartz about \$12.00 ; between \$2 and \$3 in schists. Sawmill being added to other buildings.

CLEARWATER CO. MINES.

W.L. 56, B. 13, 14, 15, 16. Clearwater Gold Mining Co. About 90 feet deep. 25 to 30 men. Hoist, boiler, compressor, etc.

WILKINSON.

W.N. 5, A.L. 333. Near Island Falls. Shaft sunk at junction of two wide, strong veins.

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Camp No. 5.

The Manitou, or Middle Division.

Comprising mines in the Manitou, Wabigoon, Minnietakie and Tache sections.

INDEPENDENCE.

H. P. 387. Between Upper and Lower Manitou lakes. Manitou Gold Mining Company. Deepest shaft over 100 feet on vein over 37 feet in width. Some drifting and cross-cutting done. Walls not reached. Has been steadily pushed for 14 months. 30 to 40 men. 10-stamps and other machinery recently brought in. 3,000 tons on dump. Average value of ore said to be over \$17.

BARKER.

H. W. 339. Private ownership. 60 feet. 100 feet drifting. 30 men. 2 Tremaine stamps. Ingersoll Compressor plant going in. Mill run \$30. Reported to have produced \$15,000.

PAUL GASSE.

H. W. 75. Private ownership. Assays reported high. 2 stamps.

JUBILEE.

H. 301. Syndicate. 75 feet deep, with other work. Hoist engine, compressor. Assays over \$7. Not working last winter.

QUACKENBUSH.

H. P. 375. American syndicate. 3 shafts; deepest 75 feet. Rich ore reported from first two shafts, which are on one vein.

LOWER NEEPAWA, or Royal Sovereign.

H. W. 54. Neepawa Gold Mining Co. 100 feet with 100 feet drifting. Assays \$8 and over. Not working during past winter.

UPPER NEEPAWA, or Victory.

McA. 28. Neepawa Gold Mining Co. About 100 feet of sinking reported. 130 feet drifting, and small shafts. Vein said to be 35 feet wide. Low grade ore on whole.

EDNA.

McA. 29. Gold Explorers of Canada, an English Co. Not working at present. In '97 was 55 feet deep, but not following vein.

CRACKER JACK.

Near Dog-fly Lake, Lower Manitou. Private ownership. 30 feet on vein 4 feet wide at surface. Said to be very rich as far as depth has gone.

SWEDE BOYS, MANITOU.

H. P. 259 and 304. Shafts 60 feet and 45 feet. A recent mill run gave \$30 per ton.

SYKES.

S. V. 105. On Lake Minnietakie. John Sykes Gold Mining Co. 75 feet deep. Cross cut of 35 feet in solid quartz. Has not struck wall. 9 men. 10 stamps recently put in.

HARVEY'S.

On Lake Minnietakie. 60 feet deep on large body of ore, yielding gold and silver.

MUNRO.

H. W. 416. Near Wabigoon. Canadian syndicate. 108 feet deepest in December. Several shafts and some drifting. 18 men. Ore is shipped to Keewatin Reduction Works. Average value over \$16.

NORTHERN QUEEN.

H. W. 130. Near Wabigoon. Rand Gold Mining Co. 50 feet deep, and cross cut at that depth for 15 feet. Ore full of iron pyrites. Average gold value \$18.50 by assays.

GOLD QUARTZ.

V. 33. Four miles east of Tache. Gold Quartz Free Milling and Mining Co. Over 25 feet on 7 foot vein. Assays reported very high. Steam hoist, compressor, pump, etc.

LADY MARION.

One mile west of Tache Station, C.P.R. Lady Marion Mining Co. Shaft 75 feet, and cross-cutting at that depth to reach the vein. Assays not known.

FRANCO.

H. W. 419. North Western Ontario Exploration Co., London, Eng. Over 200 feet deep. Vein irregular on way down, but gradually widening from a mere stringer-like surface to 5 feet at last level. Quartz reported invariably rich, but value not given.

WRIGHT.

N.T. 20. Darlot Mining Co., London, Eng. Sunk 70 feet to vein. Surface rich. Vein 12 to 18 feet. Value, etc., not yet made public.

On the properties mentioned in the list given above about 1500 men are employed.

Reports by competent engineers on any of the above mines or on other mining properties can be procured from the Mines Contract and Investigation Co., Limited.

Milling Capacity.

Without including two stamp mills with somewhat antiquated machinery, there are the following stamp mills in the Rainy River District. Where Tremaine stamps are used their capacity is estimated on the basis of ordinary gravity stamps.

<i>Mill.</i>	<i>No. of Stamps.</i>	<i>Mill.</i>	<i>No. of Stamps.</i>
Mikado	20	Foley	20
Gold Hill.....	10	Alice A.....	10
Dominion Reduction Works..	20	Lake Harold.....	5
Keewatin Reduction Works..	20	Saw Bill.....	10
Regina.....	40	Hammond Reef.....	40
Sultana	30	Independence.....	10
Golden Star.....	10	Barker.....	10
Lucky Coon.....	5	Sykes	10
A.D. 2.....	10	Paul Gasse.....	2
Olive	10	Pettigrew or King Mine.....	10

There are 302 stamps in the above list, but others are being put in. The Sirdar, Hiawatha, Golden Crescent, Golden Star and Alice A have contracted for or decided to put in during the next few months at least 200 stamps, thus raising, by the close of summer, the number to over 500, or sufficient to mill 375,000 tons of ore per annum, an amount which even at the low average value of \$10 per ton of free milling ore, would represent an output of \$3,750,000 of bullion. No doubt other properties will shortly decide on erecting stamp mills, and a few chlorination or cyanidation plants.

A Magnificent Mineral Range.

The mineral range in which the Rainy River District is embraced is a very wide one, and of immense length. Possibly in its continuity and extent it has no known equal in the world outside of the Andean and Rocky Mountain regions and their continuations on the continent of Asia. It may correspond with that geologically early Laurentian island continent, which, like a bow, stretches from Labrador southwestward across the Ottawa almost to the shore of Lake Ontario and thence curves north-westward across Lake Superior to the sub-Arctic regions between Hudson Bay and the Mackenzie River valley—a region of glacier swept rocks, often out-cropping over large areas, and stretching for thousands of miles, with a width of from a hundred to several hundred miles. But little explored, a region of wilderness, almost uninhabited, is nearly all of it. This much is known, however, that in Labrador, on the Gulf and lower part of the River St. Lawrence, as well as in its entire stretch from a little east of the Ottawa and through Ontario to the eastern shore of Lake Winnipeg, gold, iron, silver and very many of the most useful metals are found in lenses, fissures, and cracks to an extent probably unequalled, so far as present knowledge goes, in the entire remainder of the world.

The modes of occurrence of metals in these primitive and metamorphosed rocks known as Laurentian, Huronian, Keewatin, etc., appears to be in some respects different from the modes in other mineral districts. With few exceptions, the known ones only in the extreme southern end of this immense bow, as in Hastings County in South-eastern Ontario, the gold ores are largely free milling. Experience thus far has been that the veins improve in richness with depth. Where a change in the character of the ore occurs, as it does in several instances in the Lake of the Woods country, it is to an increase in the ratio of concentrates to free milling ore. The concentrates are tested by wet, or chlorination or cyanidation processes. Smelters are not required. Everywhere, too, though narrowing and losing values, sometimes, especially at about the depth of 100 to 130 feet, occur to trouble the inexperienced miner, the tendency thus far observed has been for veins to increase in width with increasing depth. No failures are known where depth is reached, all failures being due to sinkings that were not on true veins, or to ignorance, inexperience, bad management, or lack of capital. As said before, the known veins are counted by thousands: sometimes even dozens are found on single properties,

especially in the peculiar eruptive granite areas around Shoal Lake on the Lower Seine, and several other localities in the Rainy River district. These veins are sometimes, in almost every section, ten to thirty or more feet in width; and are said, on the not always satisfactory evidence of assays, to carry values as high as some of the highest grade narrow veins. But there are also several large reefs or dykes of low grade ore somewhat similar in extent to the great Hammond Reef and the Alice A. dyke, which are of proved value, of a width counting into the scores and even hundreds of feet, and seeming, from surface assays, to be likely, under the favorable conditions they present for quarrying at very low cost, to prove paying properties. Claims made on their behalf seem to bear an impress of honesty in general, and the geological formations tend to confirm the hopes advanced regarding them. Amongst great dykes mentioned are the Emma D., said to be about 200 feet wide, the Girard, the Fortier, and several others, none of them well tested as to values, and development not yet properly undertaken, chiefly through lack of capital.

In this great mineral range, nature, through glacial action, has placed the pay ore at the surface instead of it having to be found at the cost of dead work as in some parts of the world. Hundreds of feet of debris have been swept away by the glaciers, leaving the veins exposed to the eye and almost ready for active production.

Activity in Development.

In camp No. 5, the New Klondike region, near Tache, was only discovered in 1897; in the other parts little was attempted until the spring of 1896, and nearly all vigorous work was later, mostly during last year. Yet in the bounds of this camp there were last fall ten shafts down 100 feet, 20 down 75 to 100 feet, 20, 50 to 75 feet, and many between 25 to 40 feet. The greatest depth reached was 200 feet. The work done in this newest district is only an indication of recent activity in the Rainy River district.

Profitable Low Grade Ores.

In the group of mines developed on the Hammond Reef on the Upper Seine and on the Emma Abbott and Alice A. mines on the great reef, 100 to 800 feet wide, on the Lower Seine (the two groups though widely separate, are possibly one great reef extending along the Seine valley) the value of the ores near the surface and also in some instances to a considerable depth, has been well ascertained by

systematic and complete assaying and by mill runs—complete clean-ups—on the Hammond Reef Co. properties show the low value of a little less than \$4, but the profit with the new machinery installed will amount to \$3 per ton. The Folger-Hammond Co. properties, equally favorable for cheap working, show average values of nearly \$7 per ton. The Alice A. has a very wide—nearly 60 feet in places—pay streak averaging about \$10 and an average of \$5.60 across the 800 feet wide dyke. It is likely that other dykes not sufficiently developed to test them, will yield higher average values—in fact it is thought that some of these are of greater value than the Hammond Reef, while the cost of working them in many places is probably about the same as on that great lode. As in many parts of their courses they may properly be termed quarrying properties, with the usual advantages of the district in abundance of wood and water, their importance in the way of increasing the gold bullion output of the world is not easily overestimated.

The Homestake mine, South Dakota, has a world-wide reputation as a profitable low grade property, though in extent it does not rival some of the properties in the Rainy River District. It has 540 stamps. The latest annual returns show a bullion output of \$2,505,170 from 580,390 tons of ore, or \$4.57 per ton, yet after paying a dividend of \$500,000 and putting over \$220,000 into permanent improvements a surplus of over \$197,000 remained in the treasury.

The Richardson mine in Nova Scotia with a vein 6 to 14 feet wide and with 40 stamps, by a recent report, gave its shareholders a dividend of 27 per cent on the original capital, from ore varying, from month to month, from 2 dwt. (\$2) to $2\frac{1}{2}$ and $2\frac{3}{4}$ dwts, or of an average value of less than \$3. The cost of working was \$1.65 to \$1.75 per ton.

The Alaska-Treadwell, Alaska, in February averaged \$2.30 per ton, in its product. The cost of working was \$1.21, leaving a profit of \$1.09 per ton of ore mined.

The Hammond Reef, with generally higher values than the Homestake and much higher than the Richardson or Alaska-Treadwell, is easily operated, with the machinery now in, at a cost of \$1 per ton, thus leaving a very great profit.

The smaller veins, often exceeding \$20 in average value of the ore, of course involve a much higher cost than the Homestake or Alaska-Treadwell, but not, owing to their width, a much greater cost

than the Richardson, which carries a mere fraction of the gold values per ton of any of the producing mines of the Rainy River District.

Comparisons with the Rand or with the Trail Creek and Cripple Creek gold mines, which entail much greater cost in production, will show the profits of gold mining in the Rainy River district to be generally much higher than in the camps mentioned.

The *Rat Portage Miner* in a recent issue states that the dividend producing mines of the Rainy River country aggregate \$100,000 per month of bullion, while the total expenditure in reaching this production has been only about \$500,000.

Advantages of North-Western Ontario.

The advantages of the Rainy River district as a gold mining field for prospecting and mining may be stated as follows:

The immense extent of the gold area.

The extraordinary abundance of gold veins in nearly every section, and the ease with which, owing to the frequent out-cropping of these veins, they may be discovered and traced. It is only in a few sections that alluvium or drift covers the rocks below the light surface soil, while, except in alluvial valleys and swamps, the bare rock ridges crop out every few hundred yards, and generally present their perpendicular faces at the sides of the canyon-like coulees and river channels.

The general high value of the gold ores in veins of ordinary and sometimes of much more than ordinary width, and the ease and cheapness of working the large quarries of low grade ores.

The abundance of water power and of wood for building and for fuel.

The easy facilities for securing supplies by either rail or water. The country is interlaced with navigable streams and lakes, and lies but a short distance from Lake Superior. The Canadian Pacific Railway traverses the country from east to west, with English River on the eastern border of the district at a distance of only 112 miles from Thunder Bay on Lake Superior. Wabigoon, in the heart of the northern gold fields and on a line of navigation of its own, is only 198 miles distant, and Rat Portage, the foot of the extensive navigable waters of Lake of the Woods, Rainy River, Rainy Lake, and the Lower Seine, only 293 miles from Thunder Bay. Within a very short

time a second railway, now under construction, from Port Arthur along the Seine Valley to Rainy Lake and the Lake of Woods, will be completed and will traverse the very centre of some of the most active gold fields in the district. This ease of access compared with that possessed by the Transvaal and most of the gold fields of Western Australia is a very important advantage enjoyed by the Rainy River country.

Cheap Fuel and Living.

Saw mills abound, and over the entire district land is found suitable, both in soil and climate, for farming, stock raising, dairying and gardening. The broad valley of the Rainy River from the Lake of that name to the Lake of the Woods is an extensive belt of very rich agricultural country, while around Wabigoon in the north are several townships of almost unbroken farming land. All the cereals, vegetables and fruits of Manitoba are grown in the district and are of good quality, and camps need not lack the usual delicacies the soil and climate afford, for agricultural settlement will rapidly follow, in many localities, the establishment of camps. From the outside, too, provisions are cheaply obtained. Manitoba reaches to the Lake of the Woods, and Southern Ontario with its farms and orchards and vineyards is within cheap reach by both rail and water.

Full equipment in machinery, not as in Western Australia, British Columbia and the Transvaal, is obtained near at hand, from the machine shops of Ontario, Quebec and the border States.

The cost of mining is low. The ore is free milling and the concentrates are treated by simple processes. Owing to the cheapness of living and nearness to thickly settled communities, wages are reasonable, not nearly so high as in most of the great gold fields of the world. Miners on the Hammond Reef, for instance, receive \$2 a day and surface men from \$1.50 to \$1.75. The average cost of mining and milling in Northwestern Ontario varies according to circumstances from \$1 to \$3.50 per ton, most of the veins probably involving, under the present rather undeveloped conditions of the district, an expense of \$2.50 to \$3.50 per ton.

Other Ontario Gold Fields.

Going eastward from the Rainy River District, several gold-fields of more or less promise and development are found. North of Lake Superior veins and quarries of gold are known to exist, but little

development has been done upon them. East of Lake Superior, around the Michipicoten River, much activity was exhibited last winter. Thirty or more mining camps have been operating around Lake Wawa,—some of them employing as many as 20 to 40 men. But interest in the district is very recent, scarcely any development having been done until last October. The progress of this region will be attentively and hopefully watched. A little too, of gold mining, is done north of Lake Huron, in East Algoma, but so little as not to be worthy at present of more than mere reference. Amongst the mines lying farther east in the Sudbury and Wahnapite districts are several properties more or less developed, some of them carrying, as in the case of the Dwyer mine, veins five feet or more wide at the surface. There are isolated properties in the free milling district further south which may prove to be valuable, but are not sufficiently tested to justify particular reference to them. It is pleasing to observe the present great activity in gold mining, as well as other mining, in the Southeastern Ontario district, where many prospects are being more or less developed this summer, and where hundreds of men are employed in connection with mining operations. In the Hastings district, just north of Lake Ontario, there is more or less of free milling ore, but the ores are mainly refractory. The Deloro Mine, Canadian Gold Fields Co., Limited, has a valuable property in Marmora Township, Hastings County, on which two rich veins are being worked. Shafts have been sunk over 150 feet on each and much other work done. The works, which include a plant for treatment of mispickel ore by a recent process, are extensive and the results said to be very good. The Company, an English one, has such confidence in the results obtained that they have bought extensive gold-bearing lands in the neighborhood. Over 100 men are employed. As some of the gold can be extracted by ordinary processes, a stamp mill is to be put in. The equipment of the mine is excellent. The Belmont mine, in the same region of refractory ores, is owned by the Cordova Exploration Co. It is, like the Deloro, a bullion producing mine. Two large veins carrying sulphur, with arsenic, are worked. The ore yields \$6 to \$8 per ton. By a careful system, ore is selected for a well equipped 10 stamp mill, the only one actually operating last winter in the Hastings district. About 120 men are employed. The Ledyard gold mine and others are included in the district. North of Kingston, near Plevna, in Frontenac, during the last summer, extensive developments, with much machinery and many men, were commenced, and are now vigorously prosecuted,

on the Schinour property, owned by Detroit capital. Dr. Eames, with a furnace process of his own, is in charge, and furnaces for extracting the gold from 40 tons of ore per diem have been in process of erection. Two veins are each 9 feet wide at the surface. Various pits have been sunk. 60 men are employed. It is, however, premature to express an opinion on the merits of the Lake Ontario refractory-gold mining district, although the veins are abundant and the ore generally of high value in gold contents.

Transmission of Electric Power.

The instalment, now proceeding, of an electric plant to work the Hammond Reef marks a departure from the methods of mining hitherto in vogue in Northwestern Ontario. The importance of the use of electric power will be more apparent as time progresses, for although at present the supply of wood fuel is abundant nearly everywhere, the extensive development of the mining industry may within a few years everywhere, and in some localities in a shorter period, render wood relatively a heavy item in mining expenditure. The district abounds in excellent water power, readily utilizable for the production of electric power. In nearly every camp these water powers are close at hand, but the practicality of carrying electric power for long distance without much loss of current has been abundantly demonstrated. Golden Gate mine, Mercer, Utah, is supplied with electric power brought from a distance of 35 miles with a loss of only 5 per cent. of current, and at a cost of \$60 per horse power per annum. Clelonde Point mine, Toole County, Utah, is supplied from a distance of 48 miles with a loss of only 10 per cent. Tacoma is supplied with electric power from a distance of 45 miles and Seattle from a distance of 31 miles, Ogden, Utah, 36 miles, and Fresno, Cal., 35 miles. Often the electric power producer is steam power, but this is wholly unnecessary in Northwestern Ontario, where water-falls, rapids and also lakes small and large at various elevations, abound. The Rat Portage Reduction Works is about to erect a 75 horse power electric plant, and it is estimated that the cost of working this, instead of being \$16 per day of 24 hours for fuel, will be but \$8. The relative cheapness and flexibility of electric power will no doubt soon lead to its adoption on other properties besides the reduction works and the mines on the Hammond Reef.

The Profits of Mining.

The Witwatersrand in the Transvaal in 1887 produced only \$405,000 in gold ; in 1896 the product was about \$44,000,000. In eleven years it was over \$240,000,000.

The Comstock lode of Virginia City, Nev., in the past 20 years has produced \$320,000,000 of gold and silver ; the gold production was only \$8 per ton of ore.

The Calumet and Hecla, south shore of Lake Superior, up to March, 1899, paid \$60,850,000 on a capitalization of \$2,500,000.

The Alaska-Treadwell, a mine with ore valued at less than \$3 per ton, generally much less than that, and not to be compared in extent and value with the properties on the Hammond Reef in Northwestern Ontario, paid up to April, 1899, \$4,070,000 in dividends.

The Ontario, Utah, up to November, 1897, paid \$13,557,500 in dividends, and the Mollie Gibson up to a recent date \$5,000,000.

The Homestake of South Dakota has received from its shareholders only \$200,000 and though not equal in extent or richness to some of the low grade properties in Northwestern Ontario, paid up to April, 1899, \$7,431,250.

These are but a very few instances of the enormous profits of mining in regions where generally the conditions are less favorable than in the new gold fields of Ontario.

Quick Millions.

Colorado has many millionaires who, beginning with little money, have acquired their wealth since 1893 by operating or investing in mines. We mention only a few, by way of illustrating the success that sometimes results from judicious investment.

David H. Moffatt, of Leadville, who, through his many mining interests has become a multi-millionaire, in 1891, along with his partner Eben Smith, purchased a prospect in an improved Cripple Creek camp for \$65,000, paying \$5,000 down and engaging to pay the remainder later. He spent \$5,000 in further development and with the proceeds of the ore taken out paid the \$60,000 remainder of the purchase money. In 1893 he, with others, formed the Victor Gold Mining Co. with a capitalization of \$1,000,000 to further develop and operate the prospect. Up to the end of 1898, it had paid dividends of \$1,155,000, \$350,000 of the amount last year. Mr. Moffatt's favorite

and most profitable method, says the Denver *News*, has been, after careful investigation, to take hold of an undeveloped or partially developed property at the minimum of price, cost and risk, and convert it into an ore-producing, profit-paying mine.

Mr. Eben Smith, Mr. Moffatt's partner, amongst individual enterprises on his own account, purchased a small interest in the Little Johnny at Leadville, and has since received annually far more in dividends than the amount he paid for the interest.

W. S. Stratton, in April, 1891, loaded his miner's outfit on a donkey and driving it before him, walked 35 miles from Colorado Springs to Cripple Creek and discovered and became sole owner of the Independence mine which has since yielded him millions of dollars.

John F. Campion, a Prince Edward Island man, began work in 1891 on Breece Hill, Leadville, taking a lease and bond. He afterwards admitted as partners a few personal friends, who with him in 1892 formed the Ibex Mining Company with a capital of \$100,000. In 1893 about \$1,000,000 of ore was taken out and up to the end of 1898 the mine produced about \$10,000,000 of ore.

Thomas F. Walsh, the owner of the Camp Bird mine, Col., two years ago bought it as an abandoned prospect, and, though he has hitherto shipped his ore to his ten stamp mill on mule back at a cost of over \$2 per ton, the mine is netting him \$30,000 per month.

A Few Instances of Success.

The Cripple Creek district is only 6 miles long by 3 miles wide, a mere spot compared with the gold fields of Northwestern Ontario, but since 1891 it has produced over \$50,000,000 in gold, and the ore produced in 1898 is estimated at \$15,602,022, and 19 of its mines paid an aggregate dividend of \$2,352,710 in that year. Amongst the many instances of fortunes being made out of it, the few following may be mentioned :

James B. Burns, a steam fitter, and James Doyle, superintending an irrigation ditch at a salary of \$40 a month, in 1891 walked from Colorado Springs to Cripple Creek and taking another partner in, commenced the Portland mine, and in 1894 organized the Portland Gold Mining Co., a company which paid, up to May, 1899, no less than \$2,137,080 in dividends, of which \$570,000 was paid last year.

Adolph Zang, Fred Siegel and F. J. Campbell spent \$80,000 in developing the Vindicator mine before it commenced to produce, but it has paid hundreds of thousands of dollars since.

J. R. McKenney in 1891 walked into Cripple Creek with a stock of bacon and flour for his own use. He is now one of the largest owners of the Moon Anchor and was one of the largest of the Black Diamond which, after a little development, was sold to the Portland Co. for \$350,000.

Warren Wood and his two sons made over \$1,000,000 out of Cripple Creek in 7 years, and now hold the controlling interest in several mines.

In Southwestern Colorado the Smuggler-Union group, near Telluride, owned and operated by John A. Porter and associates, has produced since 1886, nearly \$10,000,000 in metal.

The Sunnyside, near Silverton, has made its owner, J. H. Terry, rich in a short time. In the winter of 1894 he had five men at work on the property, but as he had no capital they agreed to wait for their wages till spring and be paid out of the proceeds of the ore. In the spring he hired a Mexican who owned a train of pack animals to carry the ore away to a small cheap mill he had built. A Mexican there shovelled the ore into the mill and Mr. Terry worked the mill. Entirely out of the proceeds of this mine he has since built an aerial tramway 16,000 feet long from his mill above the timber limit down to the railway, where he is now erecting a 100 ton mill furnished with the most modern equipments. The pay streak on his mine is 25 feet wide and runs from \$6 per ton upwards.

Millions have been made out of the Aspen and other mines of Southwestern Colorado, notwithstanding the disadvantages of the district when compared with Northwestern Ontario.

The gold product of Colorado for 1898, is estimated at \$23,303,-613.78. In 1892 it was only \$5,539,021. The entire gold production from 1892 to 1898 (inclusive) is placed at \$94,800,140. Over 30,000 men were employed last year at the various mines, prospects and mills.

Silver

Silver is found in various parts of the great mineral belt from the Lake of the Woods to Hastings County in Southeastern Ontario. In a few instances in Northwestern Ontario it is found associated with the free milling gold ores in considerable quantity—as much as several dollars' worth in the ton—but it is in the Thunder Bay District in the neighborhood of Port Arthur that its occurrence in large quantities is most noticeable. Silver Islet, near Thunder

Bay, a small rock rising slightly above lake level, was worked some years ago until repeated flooding induced its abandonment, after it had passed the tenth level. In all \$3,089,157 of silver was taken out of it. The main region that of late years has received attention is that extending from Silver Islet and Thunder Cape westward to Whitefish Lake, a section occupied by rocks of the Animikie formation, resting horizontally on a Huronian formation and capped with a thick overflow of trap. Of this region the report of the Royal Commission appointed by the Ontario Government to examine into the mineral resources of Ontario, says: "It would be difficult to conceive a more promising silver carrying region."

Silver mining has of late revived in the Port Arthur region. Here are the Beaver and Badger and Porcupine mines, with rich ores and many hundred feet of development; and the Rabbit Mountain and East and West Silver Mountain Mines, the last three actively mining, and the Badger and Porcupine also to some extent during the past few months. Rabbit Mountain, four or five miles south of Murillo station on the C.P.R., and about twenty miles west of Port Arthur, is worked by an English syndicate. It had reached 150 feet or more in depth when it was flooded, and work was temporarily suspended. Work recommenced in January under favorable auspices. Silver Mountain is about twenty-five miles south-west of Port Arthur, and less than three miles from the Duluth and Western Railway. The West End mine comprises 55, 56 and 57 R., in Lybster township. The East End mine has over 2,000 linear feet of underground work. The vein is twelve wide at the 400 foot level. Mill rock runs range from ten to eighteen ounces of silver to the ton, and some gold. On the Badger mine, 200 and 201 T., in Gillies township, where many hundreds of feet of opening had been made some time ago, work has been recommenced by Mr. Alex. M. Hay, with English capital. The ore is very rich.

Zinc

Since 1881 zinc has been known to exist in large quantities on the White Sand river, eastward of Lake Nepigon. During the past winter large quantities were drawn to the C. P. R. near Schrieber, for shipment to a Belgian firm. The ore is said to yield forty-five per cent. of zinc. Zinc and lead, etc., is found at various places in Ontario, notably in a wide vein near the head of Thunder Bay.

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Lead

Lead is known to exist in large bodies in various parts of Ontario from the County of Lanark in the east to the neighborhood of Port Arthur in the west, though none are worked, and what developments had been undertaken have in some instances failed through mismanagement. The Ramsay Mine in Ramsay Township, Lanark, is the most eastern of the developments. In Frontenac County there are excellent galena veins of four feet in width, showing a very high percentage of lead, and a lead property of some note also exists in Galway in Peterborough County. The metal is also found at various points between Peterborough and Lanark, close to the iron deposits, and in the most of the gold belt stretching in front of the iron district. Farther north argentiferous galena is found in the Sudbury district near Straight Lake, and in the township of Creighton and near Lady Evelyn Lake between Lake Temagami and the Montreal River. In Eastern Algoma, east of Sault Ste. Marie, on Garden River, is the Victoria mine, in which a depth of over 400 feet was reached, with drifts at various levels. The ore, which was argentiferous, was shipped chiefly to Swansea, Wales. Extravagant management is assigned as the reason for its abandonment. The Cascade Mine, near by, resembles the Victoria in the character of its deposits. It reached a depth of four feet. A smelter was built in Frontenac County some years ago, but is not in operation. The capital required for lead mining is not great, but men of experience in lead mining have been too few, it is believed, for the proper development of an Ontario lead industry. A galena or silver lead property near Bannockburn in Hastings County is now being opened, with a considerable number of men at work. The ore is shipped to Europe.

Iron.

With the improved condition of trade in general, the activity in the construction of steam and electric railways, the recovery of prices, and the better appreciation of the opportunities the Province presents for iron mining, iron mining in Ontario has revived of late, and appears to be taking on a character of permanence. Notwithstanding the distance of the ore deposits from Canadian and American coal fields, several mines are again at work in the most easterly of the

Ontario iron fields, and also farther West in the Hastings region, where the Eldorado iron mine and the Dufferin are now shipping considerable quantities of ore. Arrangements, it is said, have been made for a supply of ore to the Hamilton furnace from near Sault Ste. Marie, Ont., and Port Arthur. The construction of the Port Arthur and Rainy River Railway will, it is thought, lead to the opening of the great Atti-kokan Range deposits in the Seine River basin, and ultimately to the opening of the Northern continuation of the great Vermillion iron range of Minnesota into the Rainy River District at Hunter's Island. The extraordinary abundance of iron of high grade is one of the most marked of the mineralogical features of the province. Apart from the large deposits known to exist in the comparatively little explored regions of Northern and North-western Ontario, great bodies with widths, sometimes of forty to one hundred and twenty feet, are found in profusion in South-eastern Ontario, in the counties of Renfrew, Lanark, Frontenac, Leeds, Hastings, Peterborough, and Haliburton, at no great distance from Lake Ontario, and on or near the many railways of that section of the Province, and amid magnificent hardwood forests, traversed by rapid rivers, furnishing abundant water power. Under the circumstances the manufacturing of charcoal and other iron has sprung up of late with confidence of profitable returns. The Hamilton Blast Furnace Co.'s works at Hamilton, with a capacity of 200 tons per day, has now been in operation for a little over three years, and is using more and more of Canadian ore. In 1898 it smelted 77,023 tons of ore, 20,968 tons of it Ontario ore, besides over 8,000 tons of scrap iron and mill cinder. Over 50,000 tons of coke were used, and 48,253 tons of pig iron produced, of a value of \$530,789.

The total Canadian production in 1898 was 75,920 net tons of pig iron, 23,541 of steel, and 2,276 tons of forgings.

The manufacture of charcoal iron is now to be a much more important industry in Canada than it has been. The quality of the iron produced at the Radnor Furnaces, Que., (Canada Iron Furnace Co.), has been so good that special brands of it have been in demand in Great Britain, France, Germany, and the United States. The company, whose annual production in Quebec has not been very great, are about to erect a furnace at Midland, on the Georgian Bay, to manufacture an iron similar in quality to the Lake Superior charcoal iron. The Midland furnace is to have a capacity of sixty to eighty tons per day, and is situated admirably for cheap abundant supplies of

wood, while to it ore can be cheaply brought by rail from the counties immediately eastward, or by water from the iron deposits of the Lake Superior region.

The Deseronto charcoal furnace, erected last year, has been put into blast with an average output of thirty tons a day. It is, it need scarcely be said, admirably circumstanced for profitable operation. This furnace recently received an English order for 1,000 tons of charcoal iron.

Encouragement to the production of iron in Ontario is considerable. Duties on imported iron amount to \$2 to \$2.50 per ton, and the Dominion Government also grants a bonus of \$3 per ton for iron produced from Canadian ore. Furthermore, at the recent session of the Ontario Legislature, a bonus of \$1 per ton on pig iron made from Ontario ore, and fifty cents per ton on iron from ore mined beyond the limits of the Province, was provided for out of a fund of \$25,000 per annum. Should the amount of bonus claimed in any year exceed the \$25,000 provided, the bonus will be distributed on a *pro rata* basis amongst the furnaces. The conditions of the bonus are that the proportion of extra provincial ore used must decrease until after eight years from the establishment of a furnace, only provincial ore shall be used. Not less than twenty per cent. of native ore being required for the first two years, not less than forty per cent. after two years, not less than sixty per cent. after four years, eighty per cent. after six, and not less than 100 per cent. after eight years. If the proportion of native ores in any year fall below the percentage given above, there shall in such year be deducted from the payment of fifty cents per ton on the product of ores not mined in the Province, a percentage thereof equal to the percentage of deficiency in the requisite amount of Ontario ores. If the proportion of Ontario ores smelted in any one year is less than twenty per cent., no payment of bonus on extra-provincial ores shall be made.

The iron of Ontario is chiefly magnetite, though considerable deposits of hematite are found both in the Eastern and Western parts of the Province. The magnetite generally ranges from fifty-five to sixty-eight per cent. of iron, out of a possible seventy-two. In some localities phosphorus and sulphur are present in objectionable quantities, but in many deposits they present but a trace. The objection that coal is not found in the vicinity of the iron deposits is regarded by competent authorities as worth little. Mr. James Douglas, M.E., President of the American Mining Institute, who is familiar with all

the conditions, said last March: "I think Canadians should be ashamed of themselves that their industries (iron and steel) occupy such an extremely comparatively insignificant position in their commercial life," and added, "I see no reason why in Central Canada an iron industry should not be built up that would compare with Sweden."

Corundum

In 1896 corundum was discovered in the township of Carlow in great abundance in a dyke 300 feet wide, and along it was traced for 700 feet. In 1897 further scientific search resulted in the discovery of large areas of corundum-bearing rock, one large area, thirty miles long by nine or ten wide, covering parts of six townships in Renfrew—Sebastopol, Griffith, Brudenel, Lyndoch, Radcliffe and Raglan, and two townships—Carlow and Bangor—in Hastings. Another considerable corundum area covers part of Dungannon and Faraday townships in Hastings, and a third, a small one, of several square miles, in Methuen township in Peterboro. The corundum is of fine quality and in great abundance. As it is harder than the topaz and ranks next to the diamond in hardness, the discovery is an important one. The corundum of commerce comes largely from Turkey and the Grecian archipelago, but North Carolina and Georgia furnish a quantity which sells at seven to ten cents per pound, or \$140 to \$200 per ton. As an abrasive it is much better than emery, and if produced in sufficient quantity to make it cheap might be employed to great advantage in the manufacture of aluminium. These great areas of this mineral furnish an inviting field for capital carefully organized.

Copper

The high price for copper for many months past has caused a revival of interest in the copper deposits which abound in many parts of the metalliferous belt of Ontario from west of Port Arthur eastward across the province. The chief sources from which copper has been derived in the past have been East Algoma, north of Lake Huron, where the metal is found as a sulphide, and the Sudbury country where it is found associated with nickel. In the former district, the Bruce Mines, which during the period of their working produced \$3,300,000 of copper, have recently been pumped out by Lord Percy Douglas with a view to the recommencement of mining. A

New York State syndicate is said to be testing a deposit on the Thessalon River, and another American company have acquired at Rock Lake, near by, a very large block of land across which extends an ore body miles in length and tested recently by very considerable operations which are said to have given satisfactory results, the ore body being in places fifteen to seventeen feet wide, and the copper percentage high, according to returns at the Lake Superior Power Company's works at Sault Ste. Marie.

In the Sudbury region, in many townships are large deposits of the copper and nickel mingled in not very different proportions. The yield of copper from the Copper Cliff mines, near Sudbury, in 1897, was returned to the Ontario Bureau of Mines as \$200,067 value in matte on the spot, and in 1898 the value was much greater. For the years 1893-97, inclusive, the average price of refined copper was about 11 cents per pound. At present it is about 18 $\frac{1}{2}$ cents. Owing to the boom in copper, companies are being organized and pushed, some with plausible arguments that probably are due to exaggerated views or notions of the value of the properties. While not knowing that such is the case, owing to the very limited interest taken in copper deposits in Canada, we would advise purchasers and investors to be on guard.

Nickel

Previous to the opening, about ten years ago, of the Ontario nickel-copper district, which stretches from the neighborhood of Sudbury, across a range of townships, to the Spanish River, New Caledonia was almost the sole producer of nickel, which was refined in four refineries in Europe, all of which are now shut down. In order best to compete with the Canadian product, the refining, to save expense of transportation, is now done in New Caledonia. At present the Ontario production practically controls the market. Unfortunately the industry is almost wholly in the hands of a wealthy American Company, which does the refining in two refineries in New Jersey, instead of doing it in Canada. The Canadian Copper Company, of Cleveland, which almost wholly controls the output, has an extensive plant at Copper Cliff, near Sudbury, where an immense deposit exists, and possesses altogether, it is believed, over 20,000 acres of nickel lands. The ore is reduced at Copper Cliff to perfected matte, which is shipped to Camden and Constable Hook, N.J., where the copper and nickel, which amount to about three per cent of each, and other

products are extracted. The Trill Mining Company, of Chicago, is working a deposit near Worthington station, twenty-two miles west of Sudbury, on the Sault Ste. Marie branch of the C.P.R., under contract with the Societe de Nickel of Paris, a fact of significance in indicating that to Canada French nickel men look for the most profitable production of nickel. It is understood that the Vivian Company, of Wales, is again to recommence nickel mining in the Sudbury district, and it is said that other foreign capitalists are also contemplating nickel production in the district. Canadians are doing nothing yet.

From Mr. Napier Robinson of Toronto, who has given much and careful attention to the nickel industry, we obtain the following figures, compiled from the report of the Ontario Bureau of Mines, the Dominion Geological Survey's Mineral Statistics and Mines Report, and the Dominion and United States Customs returns. The matte produced in six years, 1892-97, was 12,569 tons (51,235,000 lbs.) of nickel, and 13,098½ tons (26,197,000 lbs.) of copper ; the former worth, as refined metal, \$10,809,340, and the latter, \$2,881,670. The chief items of expense in producing the matte from which the refined metal is obtained, were wages paid in Ontario for mining and reducing the contents of the ore to matte, \$1,614,393 ; coke (one ton for every seven tons of ore) at \$7 per ton, including transportation, 67,133 tons, worth \$469,931 ; freight on 64,061 tons of matte, at \$6.25 per ton (the cost about equally distributed between the United States and Canada) \$416,396.50.

As to the actual production, doubt, however, is felt owing to the great divergence in the returns. The figures in regard to copper do not differ materially in the Ontario and Dominion returns ; but the returns made to the Ontario Government give the quantity of nickel contents of the matte as 25,137,500 lbs., valued at Copper Cliff mine, at \$2,779,840, while the Customs entries of the nickel, according to Dominion Trade returns, amount to 55,134,902 lbs., or over 100 per cent. more, and the value to \$3,438,729, or nearly twenty-five per cent. more. The American Customs' returns differ much from either, the number of lbs. being given as 46,838,162 and the value only \$1,440,856. According to the Mineral Statistics and Mines Report the quantity is 22,587,414 lbs. with a value at Copper Cliff of \$3,385,323. It is very peculiar that the figures given by the various authorities show an extreme variation of 27,097,500 lbs. in production and as much as \$1,997,891 in the value of matte at the mines.

As to ultimate value we have the following statistics:

	Nickel, lbs.	Copper, lbs.	Total Value.
Minerals and Mines, Ottawa ...	22,587,414	\$9,291,215	26,197,000
Ontario Bureau of Mines	25,137,500	8,798,125	26,197,000

Assuming the Ontario Bureau reports to be approximately correct, Mr. R. gives the matte produced at the mines as 64,061 tons, or 128,122,000 lbs.

Senator S. J. Ritchie, of Akron, Ohio, formerly the most active man in the promotion and early operation of the Canada Copper Co., of Cleveland, states that the matte contains, on an average, twenty to twenty-one per cent. of nickel and twenty-five per cent. of copper. This would show 25,624,400 lbs. of nickel and 32,030,500 lbs. of copper, or 5,833,500 lbs. more of copper than returned to either Government. At an average value of 43 cents per lb. for the nickel production in the six years and 10 $\frac{1}{2}$ cents for the copper, the net production would stand, nickel \$11,018,492, and copper \$3,443,278, a total of \$14,461,770, as against Ontario Bureau of Mines returns of \$11,745,287, and, as against Dominion Mineral Statistics, of \$12,108,197, a difference in the former case of \$2,716,483, and in the latter of \$2,353,573. The American returns place the net value of the nickel at only \$4,372,866.

But these discrepancies aside, and whatever significance they may have, an important fact stated in the evidence of Mr. Thompson, manager of the Constable Hook, N.J., refinery, before the Dingley Committee at Washington, in January, 1896, is that for every \$28,600 spent in wages and freight on nickel matte in Canada, \$100,000 is spent on the same Canadian matte in the United States, or about \$3.50 in the latter country to every dollar spent in Canada. This would make the aggregate figures \$1,614,393 for expenditure in Canada against \$5,715,279.50 for expenditure in the United States. This is a consideration of some importance.

The capitalization of the Cleveland company is \$2,500,000. The actual cash invested through shareholders' subscriptions appears to have been only \$570,700. The profits for the six years, 1892-97, seems to have been about \$5,245,770. In actual dividends (apart from earnings invested in furnaces erected, lands purchased and plant established, etc.), there was paid between Dec. 16, 1893, and March 15, 1899 (a little more than five years), no less than \$1,075,000 or very nearly twice the paid-up capital, while in 1898 and the first

three months of the present year \$325,000 was paid, or more than half of the whole cash capital.

The nickel industry is evidently a very profitable one, and likely to be still more extensive in the future owing to various extensions of the use of nickel and the adoption of nickel-steel for armor-plating the war-fleets of the world. It is important to Canada that public attention should be concentrated effectively on securing the full benefit of this manufacture to our own country. Scores of nickel deposits are still held by Canadians and are all lying idle, the Copper Cliff smelter refusing to treat the ore that has been, or might otherwise be, produced by them--and up to the present time no custom smelter has been erected in the country. Years ago, when the industry was young, we strongly urged the Ontario Government to give adequate encouragement to the erection of custom smelters in the nickel district in order to secure proper development of these deposits in the general interest of Canadians. At present, although the American monopoly has secured a great hold on the country, a remedy that would make much of the advantage of nickel mining and refining accrue to Canada would be either the levying of an export duty on ore and matte, or the granting of a bonus, as in the case of iron and steel, on every ton of refined metal produced from nickel ores. This encouragement would be likely to result in the development of many properties, in the establishment of custom smelters and refineries in Canada, and the building up of many industries associated with nickel mining. Ultimately, it might lead to Canada's manufacturing armor-plate for war vessels, for the country has all the necessary material readily available.*

Lowest Cost of Gold Mining.

Where mining is a well-developed industry, and a mine is managed by experienced men, and is well equipped with machinery and appliances for handling ore, and the ore itself is free-milling and not too slimy, the cost of mining and milling is sometimes reduced very considerably below that incurred in a new mining camp, often even when

In connection with the trip of members of the Ontario Legislature and Canadian and American journalists interested in the mining business of North-Western Ontario the statement is published that Mr. Clergue of Sault Ste. Marie, Ont., who has been experimenting with the production of nickel steel, has made a contract with Krupp, the great gun maker of Germany, to supply him with nickel steel for a period of five years. It is said that the nickel steel, which, it is assumed, will be produced at Sault Ste. Marie, will be furnished at \$15 per ton, which seems to be a very low figure.

circumstances in many respects are specially favorable to a low cost of production. We give the following statement of the cost of milling at certain camps, made by a gentleman of intelligence and carefulness, and familiar with the methods of mining :

	Average Value of Ore.	Milling Cost.
Black Hills, South Dakota	\$3.50	\$0.70
Gilpin Co., Colorado	7.00	75
Grass Valley, California	6.00	81
Amador Co., "	4.25	45
Douglas Island, Alaska	2.85	34 $\frac{1}{2}$
Victoria Camp, Australia	9.00	58
Ballarat " "	8.50	56
New Zealand	10.66	82 $\frac{1}{2}$
Transvaal	10.00	90

As mining under favorable conditions can be conducted at an expense of 50 cents to \$1 per ton, and milling for \$1, and treatment of concentrates by chlorination 10 to 20 cents per ton of quartz, the total cost may thus not much exceed \$2. Ore yielding \$5 or \$6 per ton may therefore be worked at immense profit, even after making allowances for mistakes and some incompetence in general management. Under good management, with large ore bodies and ample machinery, and given the general conditions that prevail in Northwestern Ontario, it may be possible in some instances, as on the Hammond Reef, to mine and mill at \$1 per ton or even less. A competent mining engineer, in reporting on a wide ore body near Tache station on the C.P.R., gives the extraordinarily low cost of 25 cents per ton for mining, and 50 cents for milling, a cost which we assume can only be possible under the most favorable of circumstances.

Character of the Gold Ores of the Rainy River District.

The ores of the Rainy River District, as of several other parts of the province, are essentially free milling, yielding either in broad bodies or reefs, or in veins, a sufficient value in free milling gold to make them profitable. But the proportion of free milling ore to concentrates varies very considerably in different properties. The values of most of the mines that are well tested ranges from \$10 to \$14, but in some properties it is very much higher, so far as is yet known, and in some of the reefs it is lower. Prof. Hille says that "according to the formation in which the veins occur the gold amounts to $\frac{3}{4}$ an oz. free milling to $\frac{1}{4}$ combined with sulphurets, for instance, when

in protogene or granite, while only $\frac{1}{4}$ free to $\frac{3}{4}$ combined if found in the metamorphic slates or schists, and then often coarse, as well as very fine, in small solid particles, or in scales." The proportion of concentrates, in the present development of the district, diminishes the actual bullion value return, as many of the mines have accumulations of concentrates which they have not yet the facilities to treat, and the custom plants, for reduction, are not always well equipped for the various kinds of treatment that the ores require. Slime, the intrusion of calcite or schist on the amalgamation tables, interferes, often, to a considerable extent, with the quicksilver catching the light particles of gold floating over the tables. Every mine, in the treatment of its concentrates, requires a modification in method on that broadly adopted. In some cases the associated metals bear a sufficient proportion of value to pay, properly treated, the expense of milling and even of both mining and milling. An analysis, by Johnson, Matthey & Co., assayers and meltters to the Bank of England, of concentrates from the Alice A lode showed 24.50 per cent. of iron, 10.25 of lead, 4.35 of zinc, 1.10 of copper, besides 14 dwt. 15 grs. of gold and 3 oz. 10 dwt. of silver. Iron pyrites is a very common associate of gold in the ores, copper a not uncommon one, and silver and lead occur in not a few instances. In the Alice A, in the opinion of an expert, there is sufficient value in the concentrates to pay for mining and milling. Flaky gold and very fine gold, in certain kinds of rocks, is apt to be more or less lost with the ordinary plants in use. The cyanide treatment, it is said, is sometimes objectionable, when copper is a considerable constituent of the ore. The whole subject of the most profitable treatment of the varying ores is one of much importance to the directors and managers of mines and Prof. Hille's pamphlet on "West Algoma Ores and their Preparation for a Subsequent Metallurgical Process" is worthy of consideration by those who have anything to do with the instalment either of stamp mills or more elaborate machinery for extracting gold.

What Our Company Can Do.

THE MINES CONTRACT AND INVESTIGATION CO., of Toronto, Limited, is incorporated under the general provisions of the Ontario Companies Act, and with the powers specified in the Ontario Mining Companies Incorporation Act. It has the fullest powers that any company can obtain to conduct a general mining business. The capital

stock, which is \$100,000 in \$5 shares, is not non-assessable, but bears full liability, thereby placing the company in a position more than equivalent to that of most companies capitalized at \$1,000,000 in non-assessable stock. The stock, being taken up at par liability, affords ample capital for the company to carry out the work which the incorporators have in view. The directors and officers are all experienced men in the business of mining, or its allied branches, and each department is under the management of an expert in his own line, under a general supervision that serves to concentrate the united energies of all to the most efficient accomplishment of any work undertaken, either in the direct interest of the Company itself or of that of its clients. The Company is to do all kinds of mining business, from exploration work for itself or for others, the organization of companies and judicious placing of stock, to that of equipping and operating mines.

It has arrangements for obtaining, speedily, reports on mines and mining properties in every part of Canada, the Company having, under its present and past organization, secured the services of trustworthy and experienced men—mining and civil engineers of good character and ability.

It is in a position to handle large blocks of stock of well-organized, trustworthy companies, or honestly organized but inexperienced companies, to good advantage, both time and financial returns considered, and can do this *to better advantage* than can most companies, which, not infrequently, through incautious employment of agents unacquainted with mining and the money market, imprudently throw stock, either treasury or promoters', upon the market in improper quantities for its condition at the time, and in such a manner that the financial results are disappointing, and, sometimes, embarrassing or even disastrous.

The Company has special facilities for doing the accountant work and such of the general financial management of mining companies, as these companies, in any stage of their development or career, are not always in the best condition to undertake to their best advantage, thus reducing for them the clerical and financial work, and securing at the same time such efficiency as can be attained in the interest of the particular company which intrusts our Company with such work.

The Mines Contract and Investigation Company, Limited, owns or has control of several valuable mining properties, which have been carefully investigated, and is doing development work for clients. Its sales list is a noticeable feature in its way of doing business. Prospectors and owners of mines and mining prospects will very frequently

find it to their interest to place their properties in our hands by option, commission or otherwise, so as to secure speedy and profitable sale or disposal of. We do not tie up properties without a chance of doing business for our clients as speedily as possible, and we have the best of connections and facilities for reaching possible purchasers in Canada, the United States, Britain and the Continent of Europe. We have also foreign connections by which we can obtain trustworthy information regarding mines in most parts of the world. We shall be pleased to furnish clients with full particulars regarding any procedure contemplated on their behalf.

Intending purchasers of mining properties, or investors in mining stocks, we believe, will find it much in their interest to consult us before making investments, and to their advantage, also, to make our Company a medium for the transaction of their mining business.

When a property has not been managed well, either through mistakes in actual mining or through lack of capital, it will often be a saving in time and trouble to the owners of the property to make arrangements with our Company for placing the property in a good condition, either for further operation or for sale.

No fee is charged for mere consultation, or for other services not involving reports, special investigation, contracts, sales, etc.

That a property is registered with us for sale affords reasonable assurance that as accurate information about the same as can be obtained will be furnished. Our correspondence is a very large one, and puts us in close touch with all classes interested in mining, not only in Canada and the United States, but in Britain, France and Germany, while our foreign connections enable us to receive and furnish reports on mines and mine investments in other parts of the world such as Mexico, South America, South Africa and Australia.

Foreign Promotion.

While British capital has been employed to some extent in the past few years in mining in Northwestern Ontario, and is now coming in large quantities to develop a few properties, British companies depend upon Britain for their capital and do not float their stock on the Canadian market. It is not unlikely that the troubles in South Africa, which may lead to a prolonged period of disturbance, will adversely affect the interests of mining companies in the Transvaal.

War, or even something approaching to it, might lead to serious losses to mining companies, for mines are easily flooded, and machinery destroyed, while the employment and cost of labor may be interfered with to such an extent as to make mining operations unprofitable. Under these circumstances it is not unlikely that British capitalists will be more inclined to take into consideration the Ontario gold fields, where affairs are stable and conditions extraordinarily favorable to profitable mining. But Canadians need to be awake to the fact that not only American capitalists are more and more becoming amongst the most active and enterprising developers of the Ontario gold fields but that American promoters of Ontario mining companies are rapidly increasing in number and very generally float their stock in Canadian markets, thus netting large profits to the promoters that might be retained within the Dominion to the general profit of Canada. If the foreign promotion schemes were always reliable this would be legitimate enough, even if the profits that Canadians might make, if they fully realized the value of their resources, were in some measure lost. But sometimes, we would not venture to say about how often, the schemes are not at all in the interest of the shareholders. A recent case in point is that of a mining company organized ostensibly to operate a mine in the lower Seine on a property immediately adjoining a dividend paying mine, the Golden Star. The property was almost wholly undeveloped and was purchased by the promoters for \$6,000. The stock, non-assessable, was floated in Toronto and surrounding places and jumped at so eagerly that, within two weeks after it was placed in the market, it was all bought up at a cash expenditure on the part of the investors of \$62,000, all of which, apart from the original purchase money and advertising and other expenses, went *simply* to the promoters, leaving nothing, in treasury stock, to actually make the mine a paying property, which possibly, or perhaps even probably, it might be made. This transaction was done in the face of a market not very excited over mining matters. Why should not investors see as far as they can that the constitution and aim of a company are just? Why should not, where practicable, home men, in whom people have confidence, direct mining companies? Do our home people realize the importance of our mining resources, as foreigners do?

We, in Canada, have not been altogether free from direct and insidiously indirect ways of corrupting men with large blocks of

stock for the use of their names and reputation, with the view of using them as figureheads for more or less doubtful schemes to decoy investors. This is a dodge used more or less amongst business men, who in fooling others often half fool themselves. The recent disclosures in Hooley promotion schemes in England should be sufficient to add a lesson to honest and intelligent and not over selfishly suspicious people to be on their guard. Men of experience in mining matters should not unreasonably follow these "guinea pigs." Three things are essential to success in mining; good properties, and good care taken to know they are in all probability good ; plenty of capital for their working ; and good or fairly good management. Some men are over suspicious, over careful, over conceited, but with reasonable care in these three points their investments should in the main, sometimes almost invariably, result in success.

Foreign or extra-provincial mining companies doing business in Ontario should be compelled to register under and comply with the reasonable requirements of the Ontario Companies Act or the Ontario Mining Companies Act. The Ontario Government, it is satisfactory to know, and say, have provided, as far as can be in all reason demanded, proper safeguards for the investor, such as are lacking in some, perhaps many, extra-provincial charters. Compliance with the Ontario laws, as at present devised from experience, entails no hardship on any honest concern. Moreover, in common honesty, outside parties coming here to make and draw money out of the resources of this province, should contribute something to its revenue, and to the Government, which as carefully protects their rights and privileges as it does that of its own citizens. The company which registers under, and complies with our Incorporation Acts, will benefit in the long run, by such compliance, for they will have, everything else apart, the greater confidence of the investing public.

Canadians have hitherto been occupied with the development of their rich agricultural and forest resources and the industries immediately dependent on these, and on the seaboard to some extent in fisheries. The revelations that have been made of the extraordinary mineral wealth of the country, came but slowly to be appreciated by those in the Dominion who have more or less capital to spare seeking profitable investment. The rate of interest has fallen much in the

past quarter of a century, and not altogether on account of the fall in the few money-congested countries of Europe, such as Great Britain. Part of the reason of the fall in Canada is the lack of knowledge of the greatness of our resources. The growing interest in the mineral wealth of the country, fluctuating as it has been in the few years during which it has had any appreciable intensity, and affected unfavorably as it has been by inexperienced and often "wild cat" speculations, is but the beginning of a solid, generally wise, enterprising and vigorous attitude of capital towards what is now realized as a material resource greater relatively to other resources, perhaps, than in almost any fertile country in the world, and absolutely the greatest in its kind to be found in any country. Canada appears to be—Siberia has not yet been tested—the greatest of mining countries of which, from practical tests and general geology, the world knows. The returns of gold and silver for the entire continent of Europe do not aggregate as much as may confidently be looked for from many very small districts in Ontario and British Columbia.

Needs of the Mining Business.

Farm, forest and fishery—with manufacturing and commerce dependent on these,—have engaged the attention of Canadians in the past, and it has been left to foreigners, trained more or less in the mining business, to teach Canadians the value and importance of their enormous mineral resources. We still need many trained mining men, the supply will come after a time. And we want capital. Careful and honest management of mines and mining company finances is one of the crying needs. Wild cat schemes and mining fakes will die a natural death; as people become acquainted with mining matters the number easily caught by such schemes will be smaller than it has been during the past few years, though we must not forget the "Hooley" episode in London, which has lessons for Canada as well as England.

One of the present weaknesses of the Canadian market is too much dependence on Americans from the West; a large proportion of the public seems willing to prefer their schemes to straightforward propositions placed before them by Canadians, with the result that comfortable little fortunes are made out of Eastern Canadians by promoters from the Western States, which could have been retained in Canada to the general advantage of Canadians.

A Method of Some Promoters.

Of methods adopted by some of the foreign promoters we instance one. A man with a little money secures a mining claim. Frequently there are two or three in the "deal"; one acts as the original owner and another as the expert, and they concoct a report on the property calculated to make at least the uninitiated in mining conceive the property to be one of wonderful richness. Sometimes there is a design on the part of promoters to defraud someone of a part interest, or a property may be held on option and the actual owner does not know its likely value, and the option holders wish to close a deal quickly before he finds it out and the option expires. It is a case of "deal quickly or you will lose a rare bargain." Should the possible buyers be inclined to go slowly and examine further, then the accomplice or accomplices come in with another customer, using the wires freely. This often has the desired effect. The deal is quickly closed, plans are made for the formation of a company with a million or more of dollars as capitalization. Everyone connected with promoting the company is to get for very little money a large block of stock which is soon to reach par or thereabout. Bright dreams are dreamt of much riches, but in a little time the waking up comes, only for the company formers to find that the man who sold them the property is the only man who is the better off for the transaction and he has left for other parts, or perhaps gone on "the grand tour" at the expense of his dupes.

An Instructive Contrast.

A contrast in the working of mines and mining companies is afforded by two mining companies operating in the Seine river valley. It has a valuable lesson for company directors and for investors. A company was formed to operate the Sawbill property, in the Upper Seine. The handling of the stock was placed in the hands of very clever brokers of good connections, and was so handled that it rose from the very first. The rise in the stock occurred during early development of the mine, and was largely due to reports published about the richness of the ore, and intention to put up a stamp mill, so encouraging did the development look. A stamp mill was erected, and it was expected by those unacquainted with the ways these things sometimes go, that dividends would be speedily forthcoming. Accordingly still further up went the stock until it reached nearly \$3 per share,

or nearly 200 per cent. premium. But the crash came when the first mill run was made, and soon afterwards the stock was selling at 25 cents per share. The company has been struggling for an existence since, but most of the early promotors of the company knew how to make money out of mining stock.

A contrast to this is the case of the Golden Star. The ore is rich and abundant, the machinery excellent and nearly adequate for present development, the mine management very good. In fact the mine may prove to be the best yet known in Canada; certainly as a dividend-payer it has not been equalled by any company mine for the actual cash invested. But the stock has been very badly managed. The promotors, some of them men who apparently had pressing necessities, or did not understand the ever-varying conditions of the money market, were too anxious to "realize." Their stock was put on the market in too large blocks at a time; in fact it had the same effect as a competition of the promotors for the cheapest purchaser. So the stock kept down, and the Canadian public have had the rare opportunity of being able to purchase stock for less than half its actual value, and as the stock has almost wholly been taken up in Ontario and Quebec, Canadians have for once got away ahead—if accidentally—of western American promoters.

Companies should so arrange their stock that promoters' stock can not be rushed off at the expense of treasury stock, and should place their stock in the hands of brokers whose knowledge of mining and the condition of the market will prevent too large blocks of stock being offered at a time, or the value of stock depreciated by being offered at the wrong time. The Mines Contract and Investigation Co., Limited, has the requisite knowledge of mining and of the money market to carry out stock handling to the advantage of both companies and investors.

Too Much to Promotors.

Over-capitalization of a mining company is an evil which is the more felt when the mine operated is paying dividends; worse, however, is the allotment of too much stock to promotors of a company, and too little to the treasury for development. Thirty-three per cent. on an ordinary capitalization is, in nearly every instance, as much as should be devoted to the promotors of any company handling an ordinarily well developed property. The balance devoted as treasury stock

should, with careful management on the stock market so as to secure prices the property merits, suffice to furnish enough to make a good prospect in Northwestern Ontario a large dividend-paying mine. Investors will do well to have an eye on prospectuses that promise sixty per cent. or more to the promoters.

Bearing Stocks.

A regrettable tendency is noticeable in many of the mining brokers. That is the individual and united effort to bull and bear mining stocks. A noticeable case of bearing occurred in connection with the Golden Star. A city broker received a telegram from a friend urging him to sell his stock and advise his friends to do so, as there had been a pinching out in the eastern drift. This telegram was shown and copies made of it. The so-called news and friendly advice made the stock suddenly fall nine points. The truth was there was nothing wrong at the mine, nor was there even an eastern drift, the veins on the Golden Star running north and south. It is to be feared that such tactics are common in the bearing of mining stocks. Few of our companies, it appears, have made arrangements with competent, trustworthy brokers, especially any acquainted with mines, to protect their stock from serious losses that can thus be incurred. A company should have a regular broker to protect its interests, and see that in the event of bears attempting to unjustly lower the price, the regular agent should be in a position to promptly restore stock value to its proper position.

The Mines Contract and Investigation Co., Limited, has made arrangement whereby it receives weekly or fortnightly reports from the leading mines. Companies, to avoid misrepresentation being made concerning their properties, should correspond with us directly, and we will guard their interests and that of their stockholders, so far as it is possible so to do. We are not interested as bulls or bears. Our effort is always to protect stock, secure proper values for the company and the purchaser, promote sound development of our mining business, and thereby merit the confidence and patronage of the public.

The Mines Contract and Investigation Co., Limited, is the present form of what is practically the oldest mine promotion business in Ontario, and the president of the company, who was engaged in the handling of mining properties and in mining broking in Toronto

over ten years ago, was the first mining broker in the city. With a competent staff, and a president as director who is intimately acquainted with mines and mining—an advantage enjoyed by few mining-business firms—the company is in an exceptionally good position to advise on mining affairs, to handle stocks or mines, to promote or organize mining companies, to develop prospects and sell them, operate mines or conduct their financial affairs, and to supply machinery or anything required in a mining camp. Investors in mining stocks can depend on the company for as safe investment as the market affords ; inquirers as to the value of prospects or veins they wish to purchase can secure from it trustworthy reports made by trustworthy agents of the company, and those having good properties to sell can find in the company a medium unsurpassed in Canada for finding purchasers in the Dominion or abroad.

ONTARIO MINING COMPANIES

The list of mining companies incorporated under Ontario acts since January 1, 1895, the period of active prospecting and development of the Ontario gold fields, is principally composed of gold mining companies, and intentionally excludes all companies not concerned in working gold, silver, copper, iron, nickel, zinc, lead or mica. There are, however, of companies formed previous to 1895 several which are in active existence, such as, for instance, in gold mining, the Bullion Mining Co., chartered in 1893, with a capital of \$200,000 which is now actively developing its property. Not a few iron mining companies were formed in the eighties, which worked several mines, which in many instances are now either worked by the same companies or have passed into the hands of individuals or syndicates. The resumption of silver mining around Thunder Bay recalls the Beaver, Badger, West End and other companies formed years ago. Of nickel companies there were a number formed about ten years ago, but they are nearly all inert at present owing to the practical monopoly the Canadian Copper Co., of Cleveland, enjoys in the treatment of Ontario nickel ores. Amongst gold companies formed prior to 1895 may be mentioned the Algoma Gold Mining and Reduction Co. (capital \$500,000); the Crystal Gold Mining Co. (capital \$1,000,000); the Ledyard Gold Mines Co. (capital \$1,000,000).

The companies formed since 1895 are all limited liability companies, and nearly all formed during the past two years issue non-assessable stock. We are indebted to the Ontario Bureau of Mines and the Ontario Gazette for the list.

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
Algoma Copper Mining.	Mar. 31, 1896	\$1,000,000
Algoma Coal Mining.	Dec. 30, "	1,000,000
Atlas Gold Mining and Development.	Jan. 20, 1897	90,000
Anglo-Ontario Exploration and Gold Mining.	Mar. 15, "	1,000,000
Ambrose Mine and Development.	Mar. 19, "	1,000,000
Algonquin Gold Mining and Development.	Mar. 23, "	1,000,000
Assaying and Smelting.	Apr. 17, "	75,000
Aurora Mining and Development.	Apr. 14, "	1,000,000
A.D. 2 Gold Mining.	Aug. 19, "	500,000
Abbott-Mitchell Iron and Steel.	Feb. 11, 1899	150,000
Allan Gold Reefs.	Mar. 18, "	1,000,000

Name of Company.	When Incorporated.	Capital.
Atlin Mining.....	May 19, 1899	\$400,000
Agassiz Exploration and Mining	May 31, "	1,000,000
Bald Indian Bay Mining and Investment.....	Feb. 15, 1897	6,000
Burley Gold Mining	Feb. 15, "	1,000,000
Black Sturgeon Mining	Mar. 1, "	1,000,000
Bath Island Mining and Milling	Mar. 3, "	750,000
Bi-metallic Mining and Development	Apr. 7, "	2,000,000
Bannockburn Gold Mining	Apr. 17, "	500,000
Buffalo Mining and Development	Dec. 23, "	1,500,000
Buffalo Northwestern Gold.....	Apr. 9, 1898	1,000,000
British Lion Gold Mining and Development	Apr. 27, "	80,000
Bonheur Belle Gold Mining.....	Apr. 27, "	500,000
Bad Vermillion Gold.....	Mar. 23, "	20,000
Boerth Mining.....	Nov. 23, "	1,225,000
Baltimore Copper and Gold Mining.....	May 27, "	250,000
Canonto Mica and Mineral	Oct. 10, 1895	22,000
Canadian Gold Fields	Feb. 14, 1896	2,000,000
Cronsted Mining.....	Feb. 24, 1897	450,000
Central Ontario Mining.....	Mar. 1, "	49,000
Coronado Gold Mining	Mar. 3, "	40,000
Comstock Gold Mining and Development.....	Mar. 15, "	600,000
Czar Gold Mining.....	Mar. 23, "	1,000,000
Climax Gold Mine	Mar. 23, "	1,000,000
Consolidated Gold Fields Development	May 5, "	2,000,000
Combined Gold Mines	June 21, "	1,000,000
Cameron Islands Mining and Development.....	Nov. 10, "	250,000
Chippewa Gold Mining.....	Sep. 25, "	1,000,000
Citizens' Gold and Coal Mining	Dec. 24, "	1,000,000
Calder Lake Mining	Jan. 12, 1898	100,000
Cobb Gold Mining.....	June 15, "	1,500,000
Corona Mining.....	Jan. 13, 1899	195,000
Copper King Mining.....	Mar. 24, "	150,000
Cracker Jack Gold Mining	June 10, "	1,000,000
Diamond Jubilee Mineral Development.....	May 12, 1897	2,000,000
Detroit and Hastings Mining and Milling.....	Nov. 3, "	2,000,000
Decca Mining	Mar. 23, 1898	975,000
Duluth Mining	Apr. 9, "	30,000
" " capital increased	Apr. 26, 1899 to	950,000
Dalton Gold Mining	May 17, "	990,000
Empress Gold Mining	Feb. 7, 1896	100,000
Equitable Mining and Development.....	Mar. 10, 1897	1,000,000
Eastern Mining Syndicate	Feb. 17, "	1,000,000
Economic Gold and Nickel Pyrite Smelting	Apr. 14, "	300,000
Eastern Townships Mining and Development....	June 23, "	500,000

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
Eureka Mining	July 8, 1897	\$199,000
Elzevir Mining and Development	July 11, 1898	199,000
Eagle Gold Mining, originally Stanton G. Mining and Development	Dec. 28, "	475,000
" Name changed	Mar. 28, 1899	
Edey Gold Mining.....	Apr. 13, "	990,000
Foley Mines.....	Nov. 25, 1896	1,000,000
Fort Frances Mining.....	May 26, 1897	40,000
Folger-Hammond Mines.....	Oct. 7, "	1,000,000
Fighting Chance Gold Mining.....	Apr. 19, 1899	999,999
Gold Rock Mining and Smelting.....	Jan. 23, 1896	100,000
Great Northern Mining, Exploration and Development Corporation	Dec. 2, "	675,000
Golden Fissure Mining	Dec. 2, "	1,000,000
Grimsby Gold Mining.....	Jan. 8, 1897	200,000
Golden Goblin Mining	Jan. 20, "	500,000
Gold Hills Exploration and Development	Jan. 27, "	2,000,000
Gagne Island Gold Mine.....	Feb. 12, "	500,000
Golden Gate Mining and Development	Mar. 10, "	300,000
Gold Brick Mining and Development	Apr. 7, "	500,000
Golden Island Mining.....	Apr. 30, "	750,000
Gold Cliff Mining and Development	Apr. 7, "	1,000,000
Golden Star Mining and Exploration	May 26, "	1,000,000
" Capital increased.	May 17, 1899 to	1,200,000
Gold Quartz Free Milling, Mining & Development	June 11, 1897	2,000,000
Golden Prince Mining and Development	May 5, "	750,000
Gold Horn Mining.....	May 20, "	15,000
Golden Crown Mining.....	June 23, "	950,000
Gold King Mining	July 7, "	2,000,000
Great Granite Gold Mining and Development ...	Aug. 12, "	5,000,000
Gold Creek Mines and Exploration	Aug. 19, "	500,000
Garcia Gold Mining.....	Oct. 20, "	50,000
Gold Fields	Nov. 27, "	1,000,000
Grand Calumet Mining.....	Dec. 1, "	475,000
Gore Lawn Mining and Development.....	Jan. 15, 1898	20,000
Golden Dredge Mining	Mar. 5, "	80,000
Gold Reserve Mining	Feb. 28, 1899	99,000
Golden Crescent Mining and Exploration	Mar. 16, "	1,000,000
Gold Bug Mining.....	Mar. 16, "	1,200,000
Gold Sun Mining	Apr. 13, "	250,000
Golden Eagle Mining and Exploration	Apr. 13, "	1,000,000
Gold Leaf Mining	Apr. 19, "	900,000
Galena Gold Mining	Apr. 26, "	999,000
Gananoque Gold Mining.....	May 25, "	450,000
Great North Countries Gold Mining	May 25, "	800,000
Gold Quarry Mining	May 25, "	900,000

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
Heather Bell Gold Mining.....	Nov. 6, 1896	\$1,000,000
Hammond Gold Reef Mining.....	Mar. 17, 1897	1,000,000
Hawk Bay Gold Mining.....	Jan. 29, "	150,000
Hub Gold Mining and Development.....	Apr. 17, "	600,000
Hamilton Iron Mining	May 12, "	90,000
Hastings Silver-Lead Mining	Aug. 12, "	50,000
Hiawatha Gold Mining and Milling.....	Aug. 12, "	500,000
Hattie Belle Gold, Copper and Nickel	July 11, 1898	400,000
Headlight Gold Mining and Exploration.....	Apr. 13, 1899	1,000,000
Hornblende Gold Mining.....	Apr. 13, "	900,000
Inter-Ocean Mining and Prospecting.....	Jan. 20, 1897	1,000,000
Industrial Mining, Development and Investment.....	Mar. 17, "	150,000
Indian Chief Gold Mining and Development	Apr. 14, "	1,000,000
Investors' Mining and Development.....	Apr. 28, "	1,000,000
Jackfish Bay Syndicate Mining	Apr. 23, "	99,000
John Dwyer Gold Mining.....	July 23, "	450,000
J. O. 41 Gold Mining	Jan. 8, 1898	500,000
John Sykes Mining and Milling.....	Jan. 6, 1899	499,000
Keewatin Gold Mining, Prospecting & Development	Apr. 7, 1897	750,000
Kabaskong Gold Mining.....	Apr. 21, "	500,000
Kobold Gold Mining.....	Nov. 12, "	500,000
Klondike and North-West Corporation.....	Dec. 15, "	475,000
Kildadar and Anglesea Mining and Development.....	Mar. 9, 1898	400,000
Lake Harold Gold Mines.....	Dec. 9, 1896	1,000,000
Lakeside Gold Mining	Jan. 6, 1897	750,000
Leap Year Consolidated Gold Mining.....	Jan. 27, "	1,000,000
La Reine Gold Mining	Apr. 12, "	1,000,000
Leadville Mining	Mar. 16, 1898	24,000
Lake Manitowich Gold Mining and Development	Oct. 14, "	999,999
Lucky Coon Mining	Apr. 13, 1899	1,000,000
Mikado Gold Mining.....	Nov. 6, 1896	225,000
Mississauga River Gold Mining	Jan. 13, 1897	490,000
Mineral Exploration and Development.....	Apr. 2, "	2,000,000
Megatherium Gold Mining	Apr. 7, "	100,000
Mandarin Gold Mining.....	Apr. 14, "	300,000
Mica and Mining.....	Apr. 28, "	75,000
Mines Selection	May 26, "	200,000
Mineral King Mining and Development	May 26, "	77,000
Mohawk Mining.....	Apr. 21, "	495,000
Manitou Gold Mining.....	May 12, "	1,000,000
Mines Investment Association	June 1, "	100,000
Methuen Mining	June 1, "	450,000
Mine Centre Development.....	Aug. 27, "	50,000

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
McNab Iron.....	May 15, 1897	\$50,000
McGown Gold Mining	Apr. 7, "	1,000,000
Mountain Mining	Jan. 12, 1898	499,000
Muskoka Gold Mining and Development.....	Jan. 10, "	99,000
Muskoka Beaver Mining	Mar. 5, "	490,000
Mikado Peninsula Gold Mining and Development	Apr. 13, 1899	100,000
Mines Contract and Investigation Co. of Toronto, Limited.....	May 12, "	100,000
Neepawa Gold Mining.....	Feb. 3, 1897	1,000,000
Nugget Gold Mining.....	Feb. 12, "	50,000
Nan Ki Poo Gold Mining	Feb. 17, "	1,000,000
New Ontario Mining and Development	May 12, "	50,000
North Star Mining and Development.....	Apr. 21, "	5,000,000
Northern Giant Mining	Jan. 29, 1898	400,000
Ontario Mines Development.....	Oct. 30, 1896	50,000
Ontario Gold Fields Mining and Development...	Jan. 6, 1897	2,500,000
Original Swede Boys' Prospecting.....	Mar. 10, "	90,000
Ottawa Gold Milling and Mining	Apr. 9, "	1,000,000
Ontario Reefs Mining and Development.....	Apr. 17, "	5,000,000
Ontario Prospectors' Mining and Development ..	Apr. 21, "	1,000,000
Oriole Gold	July 21, "	24,000
Otisse Gold Mining	Dec. 6, "	1,000,000
Olive Gold.....	Dec. 13, "	1,000,000
Onaping Gold Mining	June 15, 1898	490,000
Ontario-Victoria Mining.....	Feb. 28, 1899	950,000
Ontario and Rainy River Contracting and Supply	Apr. 13, "	80,000
Orion Gold Mining	May 17, "	999,999
Providence Gold Mining.....	May 2, 1895	40,000
Princess Gold Mining	Oct. 21, 1896	500,000
Preston Gold Mining.....	Nov. 4, "	50,000
Pipestone Gold Mining.....	Aug. 6, "	500,000
Premier Gold Mining	Mar. 10, 1897	495,000
Palmita Mining and Development	June 23, "	1,000,000
Peninsular Mining and Development.....	June 23, "	900,000
Plutus Gold Mining	Feb. 5, "	1,000,000
Pontiac Mining.....	Dec. 10, 1898	490,000
Parry Sound Copper Mining	Mar. 28, "	5,000,000
Queen Bee Gold Mining	Feb. 15, 1897	1,000,000
Queen of the Lakes Gold Mining & Development.	Mar. 23, "	1,000,000
Quartz Creek Gold Mining	May 6, 1899	950,000
Rainy River Mining	Nov. 4, 1896	1,000,000
Rabbit Mountain Mining	Nov. 5, 1897	2,000,000
Rupert Mining.....	Feb. 5, "	200,000
Rand Gold Mining.....	May 5, "	1,000,000

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
Railroaders' Gold Mining	Sep. 2, 1897	\$500,000
Rock Lake Mining	Jan. 18, 1899	1,000,000
Randolph Gold Mining	Mar. 28, "	1,000,000
Saw Bill Lake Gold Mining	May 26, 1896	100,000
" has since increased its capital to		125,000
Seine Manitou Gold Mining	Sep. 9, "	100,000
Standard Mining and Development	Dec. 24, "	500,000
Sweden Gold Mining	Jan. 6, 1897	500,000
Security Gold Mining and Development	Mar. 1, "	1,500,000
Sovereign Gold Mining and Development	Mar. 3, "	2,500,000
Shoal Lake and Seine River Mining	Apr. 7, "	600,000
Scramble Gold Mining	Apr. 7, "	1,000,000
Soo Mining and Exploring	June 23,	99,000
Sheba Gold Mining and Development	Dec. 23, "	495,000
Sentinel Consolidated Gold Mining	Apr. 29, 1898	250,000
Snake River Mining	Oct. 5, "	2,500,000
Seneca Gold, Copper and Nickel Mining	Aug. 31, "	999,999
St. George Mining and Development	Feb. 22, 1899	150,000
Standard Mica	Mar. 28, "	90,000
Sudbury Copper and Nickel	May 3, "	2,000,000
Sailor Consolidated Mining and Milling of Camp McKinney (Licensed)	May 6,	
Trill Mining and Manufacturing	July 7, 1896	1,000,000
Temiscamingue Lithographic Stone and Mining	Mar. 20, "	100,000
Toronto-Tudor Mining	Jan. 20, 1897	1,000,000
Thessalon Gold Mining	Mar. 3, "	800,000
Toronto and Western Mines Development	Jan. 13, "	200,000
Triggs Gold Mining	July 12, 1898	500,000
Tycoon Mining and Development	Sep. 13, "	150,000
Union Jack Gold Mines	Aug. 27, 1897	150,000
Victoria Mining	Dec. 2, 1896	450,000
Voss Mining	Oct. 14, 1898	10,000
Virginia Mining, increased its capital	Feb. 25, 1899 to	250,000
Western Ontario Mining	Nov. 18, 1896	1,000,000
Wabigoon Free Milling Gold Mining	Feb. 17, 1897	1,000,000
Webbwood Gen. Mining and Development	Mar. 23, "	490,000
Willow Creek Gold Mining and Development	May 6, "	99,000
Walpole Ore	Oct. 15, "	20,000
Windsor Yukon Mining	Mar. 16, 1898	45,000
Wawa Gold Mining	Apr. 29, "	199,000
Wallingford Gold Mining	Sep. 17, "	750,000
Westminster Mining	May 31, "	195,000
Wahnipite Gold Fields	June 9, "	1,250,000

<i>Name of Company.</i>	<i>When Incorporated.</i>	<i>Capital.</i>
Yum Yum Gold Mining	Dec. 24, 1896	\$1,000,000
Yankee Doodle Mining	Sep. 22, 1897	45,000
Yellow Jacket Gold Mining	Aug. 19, "	90,000
Yukon Mutual Mining and Exploring	Oct. 6, "	20,000
Yukon Nugget Gold Mining and Exploration	Dec. 15, "	250,000
Yukon-Klondike Co-operative Mining	Jan. 11, 1898	300,000
Zenith Gold Mining	Mar. 9, "	98,000
" " increased its capital	Apr. 15, 1899 to	900,000

Particulars regarding any of the companies mentioned above and the properties they control, etc., or regarding any other Ontario mining or mineral companies and their properties may be obtained from the Mines Contract and Investigation Co., Limited.

THE LAW REGARDING MINING COMPANIES.

Joint stock companies for carrying on mining operations of various kinds, for exploring, for smelting or reducing ores, amalgamating, etc., may be incorporated under the provisions of the general law relating to joint stock companies. Few mining companies, however, have been formed of late, excepting under the Ontario Mining Companies Incorporation Act, which in some respects is similar to the Acts in force in various States of the neighboring republic. The powers that may, if desired, be conferred on a mining company are extensive, amply covering everything likely to facilitate the operations of mining, milling, smelting, reducing or exploring, and include the right of building or acquiring steamboats, and even the carrying on of manufacture of goods required by employees of the company. As a consideration for ores, metals, or minerals sold or treated or for work done otherwise, the company may take debentures, stocks, etc., of similar companies incorporated under the Act. It may co-operate with companies carrying on business which may benefit its own shareholders and may hold shares in a company formed to build and maintain roads or waterways leading to or from its lands; in the last case, however, only with the sanction of a special general meeting of the company.

The special feature of the Act, however, is its provision for non-assessable stock. A mining company may in its letters patent secure a provision that no liability in excess of the amount paid or agreed to be paid for shares shall attach to the holder of such shares. No such shares can be issued at a discount or any rate other than had been previously sanctioned by the company, unless expressly authorized by by-law fixing the rate. A copy of such by-law, duly attested by affidavit of officers of the company, must be mailed to the Provincial Secretary within 24 hours after its passage. Every stock certificate of a company thus organized must bear in red letters the statement, "Incorporated under the Ontario Mining Companies Incorporation Act," and the words "Subject to Call," or "Not Subject to Call," according to the facts of the case. "No Personal Liability" must be printed on the stock certificates and other business paper of a company incorporated with the special exemption referred to above. Where stock is subject to call, and default is made in paying the call within sixty days after demand is made, the Secretary may advertise for one month the

sale of such stock by auction, and sell it, if the call and costs are not paid before the time announced for the sale. No shareholder is personally liable for non-payment of calls nor for debts contracted or payable by the Company.

A company incorporated under the Mining Companies Act, which has not in its letters patent of incorporation the non-assessable stock proviso, may from time to time, for lawful purposes of the company, issue shares at a fixed discount or premium, if it passes a by-law for the purpose. A copy of the by-law, duly attested by affidavits, must be mailed to the Provincial Secretary within 24 hours. Every stock certificate issued under such by-law must bear in red ink after the name of the company, the words, "Operating under the Ontario Mining Companies Incorporation Act," and where such stock certificates are in respect of shares sold, or disposed of at a discount, the words "Issued by the company at a discount of — per centum," as the case may be.

While shareholders are not responsible in non-assessable companies, for wages, directors are for wages not exceeding one year's pay earned during the year such directors hold office. No director, however, is liable unless he is sued for any such debt within a year after it becomes due, nor unless such director is sued therefor within a year after he ceases to be a director, nor before an execution against the company has been returned unsatisfied in whole or in part.

Any mining company, however incorporated, is by the Act compelled to furnish information required by the various Company Acts, and also such further information as may be demanded by the Provincial Secretary or Director of the Bureau of Mines. Amongst information specifically required by the Act is the number of shares sold and the price at which they have been sold. Extra provincial companies are practically under much the same obligations in this respect as companies incorporated under the Ontario law.

No extra-provincial mining, milling, reduction or development company having its headquarters elsewhere than in the province, can, directly or indirectly, sell its stock within the province, unless it has been licensed to do so by the Provincial Government. No license can be issued until the company has satisfied the Director of the Bureau of Mines that it has been duly incorporated, that it possesses the real estate and other assets and that it is carrying on its operations on a scale and in a manner to command the confidence of the public. To obtain this information the Government can require the production of the sworn and other documentary evidence requisite. The Government, also, if an extra provincial company acts so as to forfeit its good character, can revoke the license granted to it.

In regard to false returns, reports, etc., the provisions of the Act and of other laws bearing on the case are excellent. Fines, with a long imprisonment, can be imposed for false statements in such reports, or in the prospectus or advertisements of a company, and such penalties are recoverable at the instance of either the authorities or private individuals.

Special provision is made under the Mining Act for the incorporation of companies for building and repairing roads and drains, and the operation of waterways in connection with mining districts. Tolls must be fixed by Order in Council. Such companies may share profits with actual mining companies.

THE MINING LAW OF ONTARIO.

The Mining Law of Ontario, amongst its many provisions, provides for bonuses to iron smelting furnaces, for the appointment of inspectors and the powers they may exercise, and also for securing the health and safety of employees in mines and mine buildings. The iron bounties are referred to elsewhere. The following is a synopsis of the most important provisions of interest to investors in mining properties.

Mining Locations.

The general rule for mining locations, modified in the cases of broken water fronts or very small islands, is that in unsurveyed lands the boundaries shall be laid out north and south and east and west in rectangular areas of the following dimensions: 80x40 chains or 320 acres, 40x40 chains or 160 acres, 40x20 chains or 80 acres, and 20x20 chains or 40 acres. Five per cent. of the land is reserved for boundary roadways, and on locations bordering on lakes or rivers, a strip of one chain in width must be reserved for roadway, excepting where in the case of islands of less than thirty acres the Commissioner of Crown Lands may decide that the roadway is unnecessary. Of course this reservation along the water front is not interpreted so as to interfere with the erection of buildings at the water's edge. In territory surveyed into townships and lots, locations must consist of a half, quarter, eighth or sixteenth of a section or lot, but so that no location shall have a less area than forty acres.

Plans of surveys, field notes, etc., of a location in unsurveyed territory must be filed with the Commissioner of Crown Lands within four months after application for such location has been made, and no surveyor's plan, etc., is regarded as constituting a claim on a location unless they be filed at the Department immediately upon completion of the survey. The survey must be made by an Ontario Land Surveyor. An application for a location must be accompanied by affidavits of discovery of ores or minerals, and of absence of knowledge of adverse claims.

No individual can acquire within a radius of fifteen miles in any county or district in any one calendar year more than 320 acres of mining locations, and no firm or syndicate or company more than 640 acres. Lapsed or abandoned applications may be made up for or applying for other locations in the same county or district, but where a location is rich in ores and minerals, the Commissioner may further limit applicants to one or more locations of forty acres.

South of the French River, Lake Nipissing and the Mattawa River, mining locations may be as defined by any Order in Council, but shall never be of less than forty acres.

Prices Paid for Mining Locations.

The price per acre for all Crown Lands sold as mining locations is:—In surveyed territory within six miles of any railway, \$3.50; within twelve miles, \$3; elsewhere \$2.50. In unsurveyed territory the prices are 50 cents lower in each of the three classes. The price per acre for a patent of mining rights is one half of the rates given above. In lands leased or demised for ten years in surveyed territory, the annual rental is for the first year \$1 per acre everywhere, and for each subsequent year, 30 cents, 25 cents and 20 cents respectively for the classes of land distinguished above according to distance from railway. In unsurveyed territory the rental is in each case five cents lower.

Where, in unsurveyed territory not within a mining division, the land is shown to have no value for pine timber, a prospector or explorer may stake out not more than two mining locations of forty acres each in any one calendar year, subject to certain provisions of the Act, and may hold such locations for two years subject to an expenditure of \$3 per acre for the first year and \$7 per acre for the second year for actual mining work, after which he must complete his application as in the case of ordinary sale or lease of a mining location, but he cannot stake out a location without a license from the Commissioner of Crown Lands for which he must pay \$10, the license to continue for one year and to be renewable from year to year on payment of the same fee.

Leases of mining locations may provide that in case of forfeiture or non-renewal of the lease, any mining plant or machinery may be removed.

One fourth of the purchase money or rental of a location in unsurveyed territory must be paid within sixty days after the application is made for such location and the remainder within three months after the application. In

surveyed townships only thirty days may be allowed at the discretion of the Commissioner for fulfilling all the requirements of the application and the payment of purchase money or rental.

Expenditure Required on Locations.

The grantee or owner of mining lands must, during the first two years following the issue of his patent, expend in stripping or other actual mining operations, exclusive of construction of houses, roads, etc., a sum at the rate of \$2 per acre, and \$1 per acre during each remaining year of the seven, or the equivalent in less time; but if two or more locations are contiguous the whole of the mining work required may be done upon one of them. A report of the work done must be filed with the Director of the Bureau of Mines within thirty days after the expiration of the year or term of years for which the expenditure is required. On leased lands like duties must be performed. At the end of ten years of a lease the lessee is entitled to receive a patent for the location, but at any time before that, if rental for the full period of the lease be paid and the conditions of the lease be fulfilled, the patent is issued. Leases are forfeitable for non-payment of rent. In joint ownership or occupancy by lease, on the failure of any individual to pay his share, his interest is to be divided up amongst the other owners or lessees, if after three months' notice of default the defaulter has not paid his share. The lessee may, at any time, on payment of all rent due and the performance of all stipulations required, become the purchaser of the location, and the first year's rental is treated as part of the purchase money.

Timber on Mining Lands.

Pine trees on mining lands are reserved to the Crown, and timber licensees may enter the lands and cut and remove timber, but patentees and lessees of mining lands may cut and use pine trees required for building, fencing, fuel or any purpose essential to mining operations, and may also cut and dispose of all trees required to be removed in clearing land for cultivation, but in the last case the pines may be made subject to the same dues as a timber licensee would pay. For fuel, only dry pines can be used. Before clearing for cultivation the holder of mining lands covered by timber license must give the timber licensee three months' notice in writing so that the licensee may have the opportunity to remove the timber on the land intended to be cleared. If during the first ten years other timber than pine is intended to be cut, beyond what is necessary for mining operations or for cultivation, permission must be obtained from the Commissioner of Crown Lands, who may fix the dues to be paid on such timber.

Surface Rights.

Where mineral rights have been reserved on land for which surface rights have been granted, no prospector or explorer may enter, without the written consent of the owner of the surface rights, any land used as a garden, orchard, vineyard, pleasure ground or reservoir, or ground used for buildings or for growing crops which may be injured. Provision is made for compensation to the owner of surface rights for any interference which the exercise of mining rights may entail.

Mining Claims.

By order in Council any tract of country may become a mining division, and for it miners' licenses may be issued. Up till the present month (June) only one division—Michipicoten—had been established. The division occupies the mainland north and east of Lake Superior from latitude 48° 30' to the latitude of Cape Gargaatua, latitude 47° 36', and from the 84th meridian westward to the lake shore.

Within the past few days the Government has declared portions of Rainy River and Thunder Bay Districts, and in Eastern Algoma an unsurveyed region northward of Sudbury, as mining divisions, under charge of inspectors. Other parts of Northern and Northwestern Ontario, unsurveyed, constitute practically a mining division, in which the stakers and holders of mining claims must transact business directly with the Bureau of Mines, instead of the local inspectors of mining divisions.

A miner's license (fee \$10 per annum), authorizes the licensee to explore any part of the mining division named in his license, to employ assistance in working his claim, or to organize a company to work it. If he discovers ore or mineral in place on Crown Lands not withdrawn from location or exploration, or on which mineral rights are reserved, and not included in the license of another man, he may stake out a claim and work it or transfer his interest in it to others. If working conditions have been complied with for a period of four years on a claim 20 chains square, or three years on a claim 15 chains square or of lesser extent, or the equivalent of such working conditions has been complied with in less time, the licensee is entitled to a certificate of full performance, and to exemption from renewal fees, and necessity of a miner's license to work his claim, and is also entitled to a patent or lease of the claim free from license fees, on filing a survey plan and payment of the ordinary price or rental of mining lands. He may also, at the same costs, become the owner of any contiguous, unoccupied fraction or piece of land of less than ten acres, if it is surrounded by staked claims.

A staked claim may be an area of 15 chains or 990 feet square ($22\frac{1}{2}$ acres) laid out with north and south and east and west boundaries, or of such other extent as may be fixed by regulation, but in no case larger than a square of 20 chains (40 acres). A valuable water power on a claim is not deemed part of such claim for the use of a licensee.

A staked claim is marked on the outcropping or other indication of a vein or deposit by a discovery post bearing the licensee's name, and by posts numbered I., II., III., IV., at the north-east, south-east, south-west and north-west corners, respectively, of the claim, the numbers in each case marked on the side of the post facing the discovery post. If it be impracticable to place a corner post, a post marked W.P. (witness post) must be put as near the corner as practicable, with, in addition to its number, the bearing and distance of the site of the true corner marked on it. Where there are standing trees on the claim staked out, the licensee must blaze the trees and cut the underbrush along the boundaries and also from post No. 1 (at the northeast corner) to the discovery post.

No more than one claim can be staked out by an individual licensee upon the same vein or deposit unless such claim is at least 60 chains (three quarters of a mile) distant from the nearest known mine or discovery on the same vein. No licensee can in the same calendar year stake out more than four claims within a radius of fifteen miles in the same mining division. For each addition to a first claim \$10 per annum is charged. Within thirty days after staking a claim a plan showing the position of the posts, with distances between them, and other particulars, must be filed with the mining inspector of the district.

Failure to work a claim within three months after staking, or, at any time later than three months, allowing fifteen days to elapse without work on the claim makes the claim forfeitable unless illness or other satisfactory reason can be shown for not working, or unless, in those portions of the province farther north than the French and Mattawa Rivers and Lake Nipissing, the absence of work occurs between Dec. 1st and April 1st, or unless an Order in Council be issued allowing work within a mining division to be suspended for a certain time. Certain other failures to comply with the Act involve forfeiture of a claim. Considerable latitude is given to the inspector of a mining division in regard to extending the time of non-operation of a claim.

Royalties.

The principle of the right of royalty to Government on ores or minerals mined is emphasized by a provision in the Act for levying royalties. But the

time for levying such royalties is left to the discretion of the Government, and no royalty has yet been demanded. On lands sold or leased prior to May 4th, 1891, all claim to royalties has been abandoned by act of the legislature and thus great blocks of nickel lands as well as some other mining properties are exempted from liability to the general royalty provided for. Ores from mining locations granted since, or that may be granted up to Jan. 1st, 1890, are subject to royalty as follows: Ores of silver, nickel and copper, and iron, two per cent., all other ores and minerals, such percentage, not exceeding two per cent., as may be fixed by Order in Council. The royalties may be calculated on the value of the ores at the pit's mouth, less cost of explosives, and of labor for mining and subsequent treatment. No royalties can be imposed until seven years after the issue of a patent or lease. After the beginning of 1890 ores of silver, nickel, or nickel and copper are to be liable to a royalty of three per cent., iron not more than two per cent., all other ores and minerals such percentage, not exceeding three per cent., as may be imposed by Order in Council. The royalty may be calculated on the value of ores at the pit's mouth, less the cost of explosives and labor used in mining and raising such ores.

Diamond Drills.

Two diamond drills are provided for loan, at low cost, for exploratory work.

ADDENDA.

Since the first part of this circular, containing notes on the present position of leading gold properties in the Rainy River District, went to press, several noteworthy changes have been announced, among which are the following:

The amalgamation of the Hammond Reef Co.'s and the Folger-Hammond syndicate's properties on the Hammond Reef, under a new company with a capitalization of \$5,000,000.

The sale of the Barker mine in the Manitou Lakes country, for about \$250,000.

The acquirement of the Alice A mine by a British company, organized in England, with a capital of £300,000, and said to intend immediately erecting a mill of 150 stamps or more.

The sale of the Foley mine to a British company, the Canadian Mines Development Co. (Sir Edward Thornton, President), with a capital of £300,000.

In Eastern Ontario the Parry Sound Copper Co., with very high-grade copper deposits, and with a capitalization of \$5,000,000, has in addition to acquiring several thousand acres of copper lands around the McGown Gold Mine near Parry Sound, acquired the McGown mine also.

There are rumours that the Regina mine, now said to be over 500 feet in depth, may make changes in organization which will permit of greater facilities for handling its immense ore deposits.

BRITISH COLUMBIA.

NOTE.—A circular on the British Columbia mines will be issued later by the Mines Contract and Investigation Company, Limited.

The New Mining Divisions.

The boundary of the mining division recently established in the Rainy River District, is the Manitoba boundary from Winnipeg River to the C.P.R.; the C.P.R. to Hawk Lake Station; the lakes southward to the base line, latitude $49^{\circ} 32' 18''$ N., in Dryberry Lake; that base line to Eagle Lake; Eagle Lake and River, and Wabigoon, English and Winnipeg Rivers to the Manitoba boundary. (See Map). The new division in Thunder Bay District has for boundaries the shore of Lake Superior from Fort William to Ni pegon River; Ni pegon River and the Lake to Poshkokagan River; that river, Lake and River Des Isles, Dog River and Lake and the Kaministiquia River. The new division in Eastern Algoma has for boundaries the Height of Land from the Western boundary of Nipissing District to the C.P.R. in township 15; the C.P.R. southeasterly to the northern boundary line of Moncreiff township near Straight Lake; that line prolonged eastward to the Nipissing boundary line, and the Nipissing boundary northward to the Height of Land.

Our Map.

The copper-plate map accompanying this circular is prepared from maps of the past two years issued by the Ontario Crown Lands' survey, and supplemented in respect to the country east and northeast of Lake Minniatkie through the courteous aid of the Geological Survey of Canada, which is now preparing a map embodying the results of the surveys and explorations made during the past year. Accuracy in detail is yet impracticable over much of the district, for, as has been indicated in previous pages, only a few townships, the many mining locations, and a few other features of the country, have been thoroughly surveyed. Not always, even in some of these details, has the true latitude and longitude been determined, much of the work, especially in regard to mining locations, having been done for immediate practical purposes. Numerous canoe routes of broken lake and river have been followed by trained men, and notes taken, geological and other, along the way, but sections of the district, considerable in aggregate area, are all but *terrae incognitae*, so far as close examination of the topographical and geological details are concerned. The map, however, shows, with a correctness perhaps not yet surpassed, the general features of the country, and its drainage basins, and will prove of value to those wishing to know the trend of the rivers that flow into the English and Albany rivers, and through the Lake of the Woods into the Winnipeg river, which discharges, along with the waters of the English river basin, into Lake Winnipeg.

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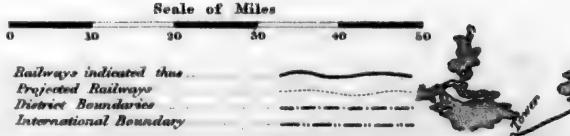
**MAP
of Part of the
NORTH WESTERN ONTARIO
GOLD FIELDS**

Specially Engraved for and Published by
THE MINES CONTRACT AND INVESTIGATION CO.
OF TORONTO (LIMITED)

*Compiled from the latest Canadian Geological Surveys
and from Surveys by the Department of Crown Lands
of Ontario.*

THE TORONTO LITH. CO. LIMITED

*Railways indicated thus
Projected Railways
District Boundaries
International Boundary*





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The Nev

The boundary of the mining district, Rainy River District, is the line from the C.P.R.; the C.P.R. to the base line, latitude 49°; the base line to Eagle Lake; Eagle Lake to the Manitoba River; the Manitoba River to the Winnipeg Rivers to the Manitoba River; the new division in Thunder Bay I. The boundary of the Lake Superior from Fort William to the Lake to Poshkoki; Des Isles, Dog River and L. Land from the Western boundary in township 15; the C.P.R. line of Moncreiff township 1 eastward to the Nipissing boundary northward to the Height of

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WRITE TO US or CONSULT US

IF you want to know the position of mining companies, or of any mine or mining property.

IF you want to invest in stocks.

IF you want to sell stocks.

IF you want to buy or sell mines or mining prospects, or if you want to give or take options on the same.

IF you want to buy or sell mining machinery or supplies.

IF you want to have special trustworthy reports on mines in any part of the world.

IF you want advice on organization and management of mines or mining companies.

IF you want a company promoted or organized.

IF you want to place your company's stock on the market to best advantage.

IF you want a prospect developed or the management of a mine undertaken.

We have excellent facilities for meeting all the wants
mentioned above.

***Reliable Agents and Correspondents wanted in districts where
we are not already supplied.***

THE Province of Ontario, larger in superficial area than either France or Germany, is one of the richest metalliferous countries in the world. Iron, nickel, copper, silver, gold, galena abound. The gold fields of the northwestern part of the province are enormous in extent, richer on the average than the Transvaal, easily accessible and workable at very low cost. Gold mining, while only recently commenced, has made great progress, and the district promises to be before long one of the most famous in the world. Returns are unusually quick.

Dwight E. Woodbridge, the eminent American geologist, interviewed by the Chicago "Times-Herald" on June 6th, 1899, says: "There is no mining country in the world so thoroughly impregnated with gold veins as is the Western Ontario district. The peculiar feature of the district is that all the gold veins have been exposed by glacial action. The glaciers have scraped the country completely, and left the veins where they can be easily traced by the prospector. The ore is free milling and very rich."

Proofs of the richness of these gold fields, and of the 1000 miles long metalliferous belt of Ontario, are found within.



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